PAINT AND OIL LOCKER SWMU 067
SOUTHERN TREATMENT AREA AIR SPARGE SYSTEM
YEAR 2 PERFORMANCE MONITORING
AND
PAINT AND OIL LOCKER NORTHERN AREA (SWMU 067) AND
SUPPLY WAREHOUSE #3, SWMU 088
LONG-TERM MONITORING
KENNEDY SPACE CENTER, FLORIDA

Prepared for:



National Aeronautics and Space Administration
Kennedy Space Center, Florida

January 2024
Revision 0

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YEAR 2 AIR SPARGE SYSTEM PERFORMANCE MONITORING REPORT
FOR
PAINT AND OIL LOCKER, SWMU 067, SOUTHERN TREATMENT AREA
AND
LONG-TERM MONITORING REPORT
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PROFESSIONAL ENGINEER CERTIFICATION

This Year 2 Air Sparge System Performance Monitoring Report for Paint and Oil Locker (POL) Southern Treatment Area, Solid Waste Management Unit (SWMU) 067, and Long-Term Monitoring Report for POL Northern Area, (SWMU 067) and Supply Warehouse #3, SWMU 088, at Kennedy Space Center, Florida, dated January 2024, has been prepared by or under the responsible supervision, direction, or control of the Florida-licensed professional engineer whose signature and seal appear below. This document and the work described herein complies with standard professional practices and requirements of Chapter 62-780, Florida Administrative Code (F.A.C.) and other rules of the Florida Department of Environmental Protection according to Rule 62-780.400(1), F.A.C.



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ABBREVIATIONS AND ACRONYMS

10x NADC	Ten times Natural Attenuation Default Concentration
ADP	Advance Data Package
AS	Air Sparge
bls	below land surface
CCF	Components Cleaning Facility
CCR	Construction Completion Report
cDCE	cis-1,2-Dichloroethene
cfm	cubic feet per minute
CMI	Corrective Measures Implementation
COC	Contaminant of Concern
DO	Dissolved Oxygen
DPT	Direct Push Technology
EE	Engineering Evaluation
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
GCTL	Groundwater Cleanup Target Level
HCP	High Concentration Plume
HS	Hot Spot
HS1	Hot Spot 1
HS2	Hot Spot 2
HS3	Hot Spot 3
IDW	Investigation-Derived Waste
IM	Interim Measure
IMWP	Interim Measures Work Plan
IWP	Implementation Work Plan
KSC	Kennedy Space Center
KSCRT	Kennedy Space Center Remediation Team
LCP	Low Concentration Plume
LTM	Long-Term Monitoring

MDL	Method detection limit
mg/L	milligrams per liter
msl	mean sea level
mV	millivolt
NADC	Natural Attenuation Default Concentration
NASA	National Aeronautics and Space Administration
NAVD	North American Vertical Datum
NTU	Nephelometric Turbidity Units
OM&M	Operation, Maintenance, and Monitoring
ORP	Oxidation Reduction Potential
PM	Performance Monitoring
POL	Paint and Oil Locker
PQL	Practical Quantitation Limit
psi	pound per square inch
PVC	Polyvinyl Chloride
RAE	Remedial Alternatives Evaluation
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
ROI	Radius of Influence
SAP	Sampling and Analysis Plan
SOP	Standard Operating Procedure
SZ	Source Zone
SW3	Supply Warehouse #3
SWMU	Solid Waste Management Unit
TCE	Trichloroethene
tDCE	trans-1,2-Dichloroethene
VC	Vinyl Chloride
VOC	Volatile Organic Compound
µg/L	micrograms per liter
µS/cm	microSiemens per centimeter
USEPA	United States Environmental Protection Agency

EXECUTIVE SUMMARY

This Year 2 Air Sparge (AS) System Performance Monitoring (PM) Report for Paint and Oil Locker (POL) Solid Waste Management Unit (SWMU) 067 Southern Treatment Area and Long-Term Monitoring (LTM) Report for POL Northern Area (SWMU 067) and Supply Warehouse #3 (SW3) SWMU 088 documents ongoing remedial efforts at the POL (SWMU 067) and SW3 (SWMU 088) sites at Kennedy Space Center (KSC), Florida. The overall goal for these sites is to reduce concentrations of groundwater contaminants of concern (COCs), specifically trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), trans-1,2-dichloroethene (tDCE) and vinyl chloride (VC), to below the State of Florida Groundwater Cleanup Target Levels (GCTLs).

This report documents both the operation, maintenance, and monitoring (OM&M) activities and PM evaluation for the POL Southern Treatment Area during the second year (Year 2, September 2022 to July 2023) of AS operation, as well as the results of LTM of the POL Northern Area and SW3. The contents of this report were previously presented as an Advance Data Package during the October 2023 KSC Remediation Team (KSCRT) Meeting.

The AS system in the POL Southern Treatment Area was constructed as an Interim Measure (IM) between 2019 and 2021, with full-scale startup in February 2021, to treat a chlorinated solvent groundwater plume resulting from historical operations supporting the National Aeronautics and Space Administration's (NASA's) Space Program. The AS IM was installed in the POL Southern Treatment Area to target the high concentration plume (HCP), which included a source zone (SZ) area where TCE was found to exceed 11,000 micrograms per liter (µg/L) extending to a depth of 30 feet below land surface (bls). The objective of the AS IM was to remediate groundwater within the designed treatment zone to support the transition to LTM, and ultimately reduce the concentrations of TCE, cDCE, tDCE and VC to below their respective GCTLs. After one year of operation, the AS system had met the IM criteria and it was recommended during the October 2022 KSCRT meeting to continue operating the AS system at least through March 2023 to further reduce concentrations of the COCs (Meeting Minute 2210-M12, Decision D13) before discontinuing active AS treatment.

The POL Southern Treatment Area AS system operated as designed during Year 2 and had an overall runtime of 83 percent. Downtime was attributed to PM sampling activities, system maintenance, and hurricanes. Recent sampling results of COCs in wells within the active treatment area were similar to concentrations noted during the last sampling event (Year 1, June 2022), and therefore warranted discontinuing AS treatment. The AS system was shut down in June 2023 and the compressor trailer was moved to Launch Complex 39B for use at that location. PM sampling events were conducted in October 2022, December 2022, March 2023, and July 2023. A total of 21 monitoring wells were sampled as part of the POL Southern Treatment Area PM Year 2 monitoring network:

- Four wells screened in the Shallow Zone (5 to 20 feet bls);
- Fourteen wells screened in the Intermediate Zone (20 to 30 feet bls);
- Three wells screened in the Deep Zone (30 to 50 feet bls).

The sampling results showed by the end of Year 2:

- Shallow Zone - one well had exceedances of GCTLs (cDCE and VC);
- Intermediate Zone - two wells had exceedances of GCTLs (TCE);
- Deep Zone – no exceedances of GCTLs.

On January 9, 2023, ambient air samples were collected from five different locations. This was completed for worker health and safety as well as to verify compliance with the KSC Title V Air Operation Permit. Ambient air sample results were all non-detect for all COCs, indicating no air health and safety issues and compliance with the Air Operation Permit.

AS operations at SW3 and the POL Northern Area were conducted from May 2009 until March 2018 when the sites were transferred to an LTM program. The Florida Department of Environmental Protection (FDEP) requested additional monitoring wells be installed at SW3 and POL during the October 2022 KSCRT meeting. The locations of these new wells, to be used as downgradient monitoring points, were identified, and then approved by the FDEP. The nine monitoring wells were subsequently installed between March 23, 2023 and April 4, 2023.

LTM sampling events at SW3 were conducted in October 2022 and July 2023. LTM sampling was conducted at the POL Northern Area in October 2022, December 2022, March 2023, and July 2023. A total of seven monitoring wells were sampled as part of the POL Northern Area LTM [1] and a total of 12 monitoring wells were sampled as part of the SW3 LTM monitoring network:

POL Northern Area:

- Five wells screened in the Shallow Zone (5 to 20 feet bls);
- One well screened in the Intermediate Zone (20 to 30 feet bls);
- One well screened in the Deep Zone (30 to 50 feet bls).

SW3:

- Two wells screened in the Shallow Zone (5 to 20 feet bls);
- 10 wells screened in the Deep Zone (30 to 50 feet bls).

Analytical results from monitoring wells at both sites generally indicate that concentrations of COCs have been stable or decreasing compared to the previous year. Analytical results for COCs at the nine new downgradient monitoring wells were all non-detect.

Recommendations were presented to the KSCRT during the October 2023 KSCRT meeting on the path forward for the POL Southern Treatment Area, POL Northern Area, and SW3 based upon the PM and LTM sampling results. The Team reached consensus on the recommendations below (Meeting Minute 2310-M16, Decisions D49-D52).

- Prepare the POL Southern Treatment Area Year 2 PM Report and POL Northern Area and SW3 LTM Report for NASA's submittal to FDEP (Meeting Minute 2310-M16, Decision D49).

[1] Two monitoring wells were installed in the POL Southern Treatment Area as downgradient delineation monitoring points designated as LTM wells and were incorporated into POL Northern Area LTM for this reporting period.

- Transition the following 15 monitoring wells in the POL Southern Treatment Area to annual-LTM sampling (October 2023 to be sampled in conjunction with POL Northern Area and SW3): POL-MW0012S, POL-MW0016S, POL-MW0017S, POL-MW0026S, POL-MW0045S, POL-MW0022I, POL-MW0036SI, POL-MW0041SI, POL-MW0042SI, POL-MW0043I, POL-MW0045I, POL-MW0022D, POL-MW0039ID, POL-MW0043D, and POL-MW0044D (Meeting Minute 2310-M16, Decision D50).

- Continue to sample the following LTM wells at SW3 and POL Northern Area on an annual basis in October 2023 to maintain a uniform sampling cycle: SW3-MW0009, SW3-MW0024, SW3-MW0025, SW3-MW0027, SW3-MW0028, SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, SW3-MW0035, POL-MW0009S, POL-MW0026S, POL-MW0033SI, POL-MW0034S, POL-MW0048I, and POL-MW0048D (Meeting Minute 2310-M16, Decision D51).

- Prepare an LTM Report capturing LTM recommendations for NASA's submittal to FDEP (Meeting Minute 2310-M16, Decision D52).

It is understood that FDEP may have questions or additional recommendations based on their review of this report.

SECTION I
INTRODUCTION

This Year 2 Air Sparge (AS) System Performance Monitoring (PM) Report for Paint and Oil Locker (POL) Solid Waste Management Unit (SWMU) 067 Southern Treatment Area and Long-Term Monitoring (LTM) Report for POL Northern Area (SWMU 067) and Supply Warehouse #3 (SW3) SWMU 088 presents operation, maintenance, and monitoring (OM&M) activities supporting the AS Interim Measure (IM) at POL Southern Treatment Area and LTM results for POL Northern area and SW3 located at Kennedy Space Center (KSC), Florida (Figure 1-1). POL and SW3 have been designated as SWMU 067 and SWMU 088, respectively, under KSC's Resource Conservation and Recovery Act (RCRA) Corrective Action Program. The locations of POL and SW3 within the boundaries of KSC are shown on Figure 1-2.

Remediation and reporting of POL and SW3 have been streamlined over the years due to the proximity of the two sites. The scope for these sites currently includes two main components: (1) LTM at SW3 and the POL Northern Area, where an AS system began operation in May 2009 (with expansion in December 2012) and June 2013, respectively, and subsequently turned off for both sites in March 2018 (NASA, 2019a); and (2) Active AS operations and PM in the POL Southern Treatment Area where an AS system was installed and began operation in 2021.

This report was prepared for the National Aeronautics Space Administration (NASA) under Indefinite Delivery Indefinite Quantity Contract 80KSC019D0011, 80KSC019F0098.

The timeframe for activities covered under this report is from September 2022 to July 2023. The following activities were completed during the operational period covered in this report:

POL Southern Treatment Area AS IM

- Annual PM sampling of six monitoring wells for volatile organic compound (VOC) analysis in March 2023 for POL Southern Treatment Area.

- Semi-annual PM sampling of seven monitoring wells in October 2022 and March 2023, eight monitoring wells in December 2022, and 15 monitoring wells in July 2023 for VOC analysis.

- Collection of five air samples for VOC analysis for continued health and safety air monitoring and compliance with KSC Title V Air Operation Permit in January 2023.

- OM&M of the AS system which included: weekly inspections for leakage, excessive vibration / noise / temperature, oil levels and lubrication; replacing filters as needed; inspection of condensate treatment systems and refrigerated air dryer; adjusting pressure and flow as needed; recording of system operational data; and housekeeping from September 2022 through June 2023.

- Decommissioning and relocation of the AS compressor and control trailer in June 2023.

POL Northern Area and SW3 LTM

- Annual LTM sampling for the POL Northern Area, including sampling two monitoring wells in October 2022, three monitoring wells in December 2022, and two monitoring wells in July 2023. Supplemental sampling was conducted at two monitoring wells in March 2023.

- Annual LTM sampling for the SW3 area, including five monitoring wells in October 2022 and seven monitoring wells in July 2023 for VOC analysis.

- Installation of nine additional monitoring wells in March/April 2023.

These activities were presented during the October 2023 KSC Remediation Team (KSCRT) meeting and are presented in detail in this report.

The objective of the POL Southern Treatment Area AS IM is to remediate contaminated groundwater within the treatment zone to support the transition to LTM, similar to that previously completed in the POL Northern Area and SW3. The POL Southern Treatment Area high concentration plume (HCP), defined as groundwater with contaminant concentrations

exceeding Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentrations (NADCs), was previously presented to the KSCRT in the December 2016 Site Characterization Advance Data Package (ADP). At that time, the HCP consisted of four separate hot spots (HSs), defined as areas where VOC concentrations are greater than ten times NADCs (10x NADCs), as well as three source zone (SZ) areas where trichloroethene (TCE) concentrations exceeded 11,000 micrograms per liter (µg/L) (NASA, 2016). However, based on the October 2019 baseline direct push technology (DPT) groundwater investigation, which is described in detail in the POL Southern Treatment Area Implementation Work Plan (IWP) (NASA, 2020), the HCP was re-defined as two separate HSs and one SZ.

1.1 PURPOSE

The purpose of this report is to present AS IM activities, and LTM activities conducted between September 2022 and July 2023 (i.e., Year 2) for the POL and SW3 areas. Activities include OM&M, groundwater and air sampling events, and post-remediation monitoring at the POL Southern Treatment Area, and LTM sampling at the POL Northern Area and SW3. This report also provides recommendations for future activities at POL and SW3.

The activities documented in this report were conducted in accordance with the IM Work Plan (IMWP) (NASA, 2018), IWP (NASA, 2020), Site-Specific Health and Safety Plan (NASA, 2019b), the last issued OM&M Report (NASA, 2023), and KSCRT-related decisions for both the AS implementation in POL Southern Treatment Area and for the LTM programs at POL Northern Area and SW3. Recommendations for LTM are also included in this report.

1.2 BACKGROUND AND SITE SETTING

KSC is located on the northern section of Merritt Island in Brevard County, Florida. Merritt Island is a barrier island surrounded by the Banana River on the east and the Indian River on the west, forming the Indian River Lagoon estuarine system (Figure 1-1). Within KSC's Industrial Area, POL and SW3, are situated south of 4th Street SE and west of C Avenue SE (Figure 1-2).

POL is located east of the SW3 property and houses the currently occupied warehouse (M6-894) and several cylinder storage lockers (Figure 1-2). To the east of the property is a former

wastewater treatment facility (Sewage Treatment Plant #1) that currently functions only as a lift station. South of 5th Street SE is the POL Southern Treatment Area, which consists of undeveloped land and the two former polishing ponds for the former wastewater treatment plant (Figure 1-2). North of the POL facility is the Communications, Maintenance, and Storage Facility, and to the northwest is the Vehicle Maintenance Facility. The SW3 property, sharing the western boundary of the POL facility, houses the SW3 building (M6-891), constructed in 1967 and currently used for the storage of assorted building materials such as drywall and door frames. The locations of these structures are shown on Figure 1-2.

1.3 SITE CHARACTERIZATION AND PREVIOUS REMEDIATION

This section summarizes previous environmental investigation and remediation at POL (SWMU 067) to provide background for the AS system at POL Southern Treatment Area. Information regarding site characterization and previous remediation at SW3 (SWMU 088), which included an AS system that began operation in May 2009 (with expansion in December 2012) and ceased operation in March 2018, can be found in the previous OM&M Report (NASA, 2019a) and SW3 Construction Completion Report (CCR) (NASA, 2013a).

The initial POL Corrective Measures Implementation (CMI) Work Plan (NASA, 2005) identified two areas of groundwater contamination at POL. The first was an HCP located along 5th Street SE with TCE concentrations greater than its FDEP NADC. The second was a low concentration plume (LCP) with TCE concentrations less than the NADC, but greater than the State of Florida Groundwater Cleanup Target Level (GCTL). Between December 2005 and December 2006, the HCP was treated in accordance with the POL Corrective Measures Design (NASA, 2004). Areas with TCE concentrations exceeding 1,000 µg/L were treated via in-situ chemical oxidation using sodium permanganate to oxidize TCE and reduce TCE groundwater concentrations to less than 1,000 µg/L. Areas with TCE concentrations less than 1,000 µg/L were treated via enhanced in-situ biodegradation with ethyl lactate through four injection events to reduce groundwater VOC concentrations to less than NADCs.

In December 2007, TCE concentrations persisting above 1,000 µg/L were found in the vicinity of 5th Street SE at well MW0026S, and a fifth ethyl lactate injection event was conducted in the

central area of the site. A DPT groundwater investigation was initiated in March 2008 to determine the northern boundaries of the HCP and further delineate the extent of NADC exceedances within the HS areas.

In March and April 2009, a HS was identified south of 5th Street SE, approximately 120 feet south of monitoring well MW0012, with a TCE concentration of 39,000 µg/L. This prompted additional DPT sampling in July and August 2009, focusing on delineating the northern and southern extents of the groundwater plume.

In February 2011, a Site Characterization ADP for POL was presented to the KSCRT. The KSCRT reached consensus that the northern part of the POL groundwater contamination was delineated, and that a Remedial Alternatives Evaluation (RAE) should be completed for both Hot Spot 1 (HS1) and Hot Spot 2 (HS2). The KSCRT also stated that additional delineation was required for Hot Spot 3 (HS3) located south of 5th Street SE (Meeting Minute 1102-M13, Decisions 1102-D44 and D46). To follow up, a DPT investigation was conducted at POL and the RAE was presented to the KSCRT in May 2011. The POL groundwater plume north of 5th Street SE was designated as the Northern Active Remediation Zone. Additional delineation was also deemed necessary for GCTL exceedances to the south of 5th Street SE. The KSCRT reached consensus that an IMWP should be prepared with AS as the selected groundwater remediation method for the shallow portion of the Northern Active Remediation Zone.

During these DPT investigations, vinyl chloride (VC) concentrations exceeding 10x NADC were encountered in the groundwater south of the established SW3 Active Remediation Zone. In May 2011, a CMI was proposed for the adjoining property to the west (SW3) to address AS expansion extending south of 5th Street SE. In December 2011, the IMWP outlining the design of the proposed AS system was submitted to FDEP (NASA, 2011).

A follow-up DPT investigation took place in June 2012 at POL, and an isolated TCE HCP was identified along the northern fence of POL. This TCE HCP was identified as the Northern TCE HCP. The KSCRT reached consensus to conduct additional DPT investigations to gather data for the design of an AS system expansion in the northern TCE HCP upon confirmation of the effectiveness of the AS system in the shallow zone of the HS1.

The POL CMI Annual Groundwater Monitoring Report (NASA, 2013b) was presented at the KSCRT in February 2013. Groundwater monitoring activities indicated that TCE concentrations were increasing at monitoring well MW0011I, suggesting a potential southern migration of the groundwater plume. The KSCRT reached consensus for the three zones within the Northern Active Remediation Zone to be treated via the AS trailer located on SW3, which was already operational for the SW3 plume. The three zones in the Northern Active Remediation Zone requiring treatment included shallow Zone 1 at 10.5 feet below mean sea level (msl), shallow-intermediate Zone 2 at 20.5 feet below msl, and Intermediate Zone 3 at 30.5 feet below msl. The three Northern Active Remediation Zone zones were treated concurrently with the two SW3 zones (north and south). Design modifications included two additional manifold lines inside the trailer and the installation of three 3-inch trunk lines leading from the trailer to the POL area.

Follow-up DPT sampling for POL was conducted in conjunction with initial operation of the AS system. The three zones of the Northern Active Remediation Zones were targeted. The AS system for the three Northern Active Remediation Zone zones was installed as outlined in the POL construction completion report (CCR) (NASA, 2014), and began operation in June 2013.

A PM ADP for the original POL AS system via the SW3 AS trailer was presented to the KSCRT in January 2015. Team consensus was reached to expand the AS system to treat the Northern HCP near the northern fence line of the facility by installing seven shallow AS wells and associated air supply lines. In July 2016, AS expansion construction for the Northern HCP was initiated, with system operation beginning in August 2016. The POL Site Characterization ADP (formerly Step 1 Engineering Evaluation [EE]) was presented to the KSCRT in December 2016 (NASA, 2016). Consensus was reached that the northern and southern extents of the plume had been delineated. Approval to proceed to the RAE was given for this expanded project area.

In the KSCRT meeting that took place in February 2017, the OM&M Report (NASA, 2017a) from 2016 was presented. Consensus was reached that the northern and southern extents of the plume have been delineated. Approval to proceed to the RAE was then given for this expanded project area.

The KSCRT reached consensus to shut down the POL and SW3 AS system, and LTM of 13 monitoring wells at POL Northern Area and 10 monitoring wells at SW3 with further optimization after two quarterly events in March 2018 (Meeting Minutes 1803-M17 and M19, Decisions 1803-D61 to D64). Specific reasons for turning off the AS system included significant reduction in groundwater concentrations within the POL and SW3 remediation zones (except for POL-MW0034S, located north of 5th Street SE, Northern Active Remediation Zone) and difficulty in maintaining the design flow of 5.0 cubic feet per meter (cfm).

A baseline DPT investigation was conducted in October 2019, to confirm and refine the AS treatment area for the POL Southern Treatment Area. Results from this DPT investigation were presented in the POL Southern Treatment Area IWP (NASA, 2020).

Supplemental DPT sampling was conducted from October to November 2021 to provide additional data points to support the POL Southern Treatment Area PM and SW3 LTM programs by evaluating the LCP boundaries and determine if plume migration is occurring outside of the established boundaries. This DPT investigation indicate that no LCP migration occurred offsite or any further downgradient since the October 2019 baseline sampling event. The results of this DPT investigation are presented in the POL Southern Treatment Area CCR and PM and POL SW3 LTM Report (NASA, 2023).

In August 2022, a DPT sampling investigation was conducted to confirm the Year 1 OM&M analytical results. The investigation was focused on the SZ and HS areas. The results of this investigation indicated that the PM well network is adequately tracking the degradation progress of the former SZ and HS areas and the LCP has not migration has occurred. Detailed results of the August 2022 DPT investigation are presented in the POL Southern Treatment Area CCR and POL SW3 LTM Report (NASA, 2023).

1.4 SITE GEOLOGY

Soil borings were completed in 2002 for the POL facility as part of the 2002 POL RCRA Facility Investigation (RFI) Report (NASA, 2002). Additionally, seven soil borings were completed in October 2019 to provide additional lithologic evaluations along the Southern Treatment Area plume centerline and to confirm the geology of previously interpolated zones. Transects

connecting the soil borings for POL are shown on Figure 1-3. The corresponding geologic cross-sections are presented on Figure 1-4 through Figure 1-7, which were also included in the POL Southern Treatment Area IWP (NASA, 2020). A summary of the lithology encountered at POL is presented below.

The surficial soils at POL generally consist of undulating layers of unconsolidated sediments deposited in a marine coastal environment. From ground surface to approximately five feet below land surface (bls), tan to yellowish brown fine-grained sand was typically encountered across POL. Below this interval, dark brown to black fine-grained sand with organics was encountered to about 10 feet bls, where brown fine-grained sand with silt was found, persisting to a depth of approximately 22 feet bls. From 22 to 66 feet bls, the soils were generally classified as gray fine-grained sand with 20 to 50-percent shell fragments and olive gray fine-grained dense sand with 20-percent shell fragments. At this interval, shell fragments appeared to increase in abundance toward the northwestern section of the area, with trace to little clay and silt common in narrow 1–3-foot lenses. From 66 feet bls to about 73 feet bls, olive gray, dense fine-grained sand with 20-percent shell fragments was noted. These strata grade into a hard, olive gray clay from 73 to 88 feet bls, marking the vertical extent of the soil borings.

Lithology at SW3 has been found to be similar to POL based on previous sampling and proximity of these sites.

1.5 SITE TOPOGRAPHY AND HYDROLOGY

The topography of the POL and SW3 sites is generally flat, with elevations of approximately eight feet above msl, relative to the North American Vertical Datum (NAVD) of 1988.

The average groundwater elevation is approximately 5 feet above msl. Based on groundwater elevation data collected from site monitoring wells, groundwater at POL generally flows to the south-southeast, toward the lower-lying areas of the former Sewage Treatment Plant #1 polishing pond and ditch system oriented east to west along the southern extent of the POL treatment area. Groundwater at SW3 generally flows to the south, toward the same ditch system. This ditch system ultimately connects to the Region I Stormwater Basin, located approximately 0.60 miles to the southeast of the POL and SW3 sites.

1.6 INTERIM MEASURE OBJECTIVE

The overall Corrective Action objective of the Site is to reduce concentrations of TCE, cis-1,2-dichloroethene (cDCE), trans-1,2-Dichloroethene (tDCE) and VC in groundwater to concentrations below their respective State of Florida GCTLs.

As part of the overall Corrective Action, the IM for the POL Southern Treatment Area was designed to decrease groundwater VOCs in the treatment zone to support transition to LTM. Based on performance of the IM, AS operations were modified, as appropriate, to achieve the IM objective.

The VOC groundwater plume at the POL Southern Treatment Area was divided into four areas:

- LCP defined as an area with individual VOC concentrations greater than GCTLs but less than NADCs.
- HCP defined as an area with individual VOC concentrations greater than NADCs.
- HS3 defined as an area with VOC concentrations greater than 10x NADCs within the POL Southern Treatment Area.
- SZ where TCE concentrations exceed 11,000 µg/L.

The AS IM presented in this document addresses the HCP at POL Southern Treatment Area. The table below provides the NADCs (IM cleanup levels) along with GCTLs for the contaminants of concern (COCs) (overall site cleanup levels).

Table 1-1. Interim Measure and Overall Site Cleanup Levels

Constituent	GCTL (µg/L)	NADC (µg/L)
TCE	3	300
cDCE	70	700
tDCE	100	1,000
VC	1	100

1.7 REPORT ORGANIZATION

The remainder of this document is organized as follows:

Section II: System Operation and Maintenance- POL Southern Treatment Area describes the system operations and maintenance of the AS system.

Section III: Performance Monitoring - POL Southern Treatment Area, which provides a summary of the quarterly PM results collected during Year 2 operations of the POL Southern Treatment Area AS IM and after final AS system shut down.

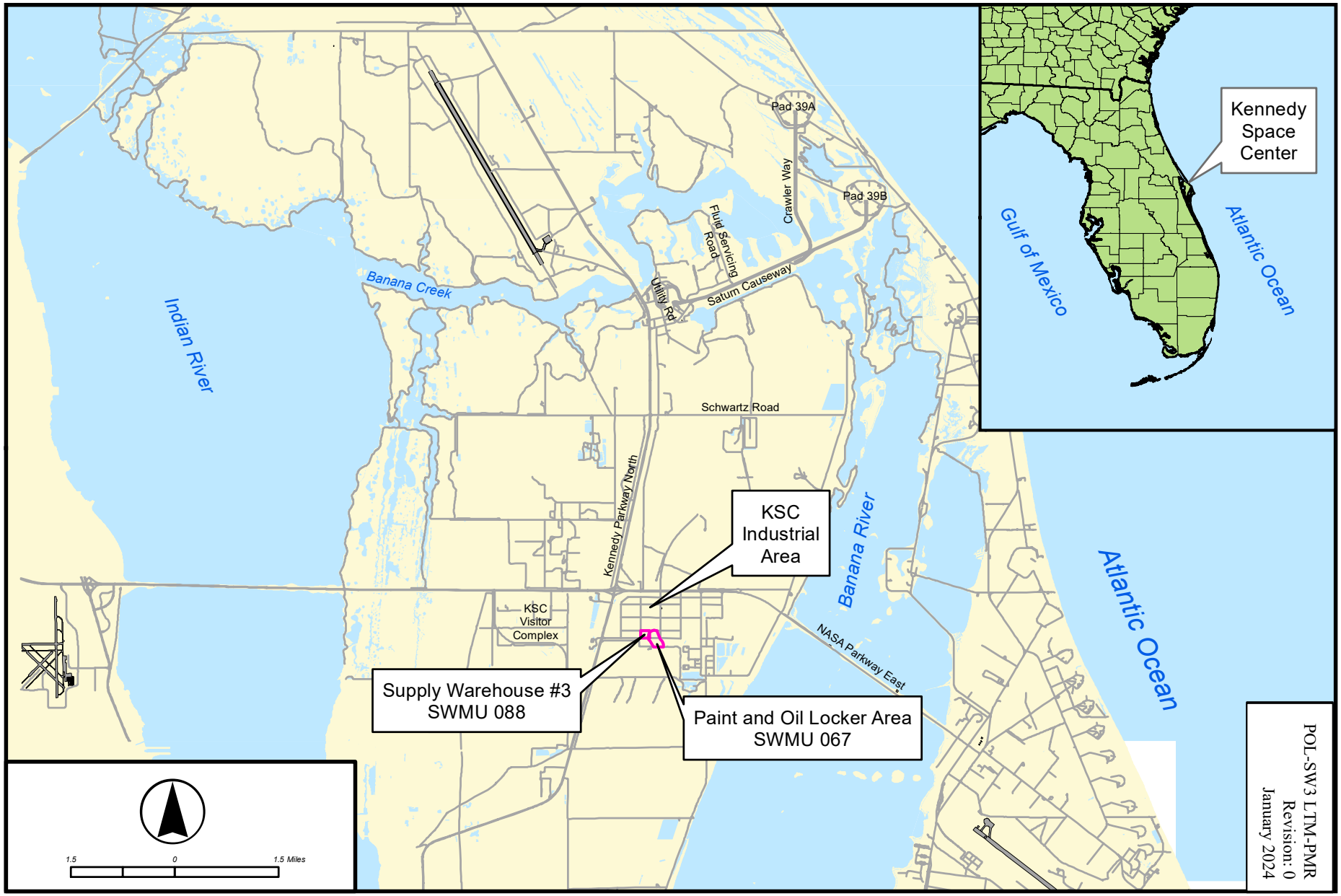
Section IV: Long-Term Monitoring POL Northern Area and SW3, which provides a summary of the LTM analytical results for the POL Northern Area and adjacent SW3.

Section V: Conclusions and Recommendations summarizes activities conducted in support of the POL Southern Treatment Area AS IM and POL Northern Area and SW3 LTM programs, and presents recommendations based on groundwater monitoring results and system operations.

Section VI: References provides a listing of the references cited in this report.

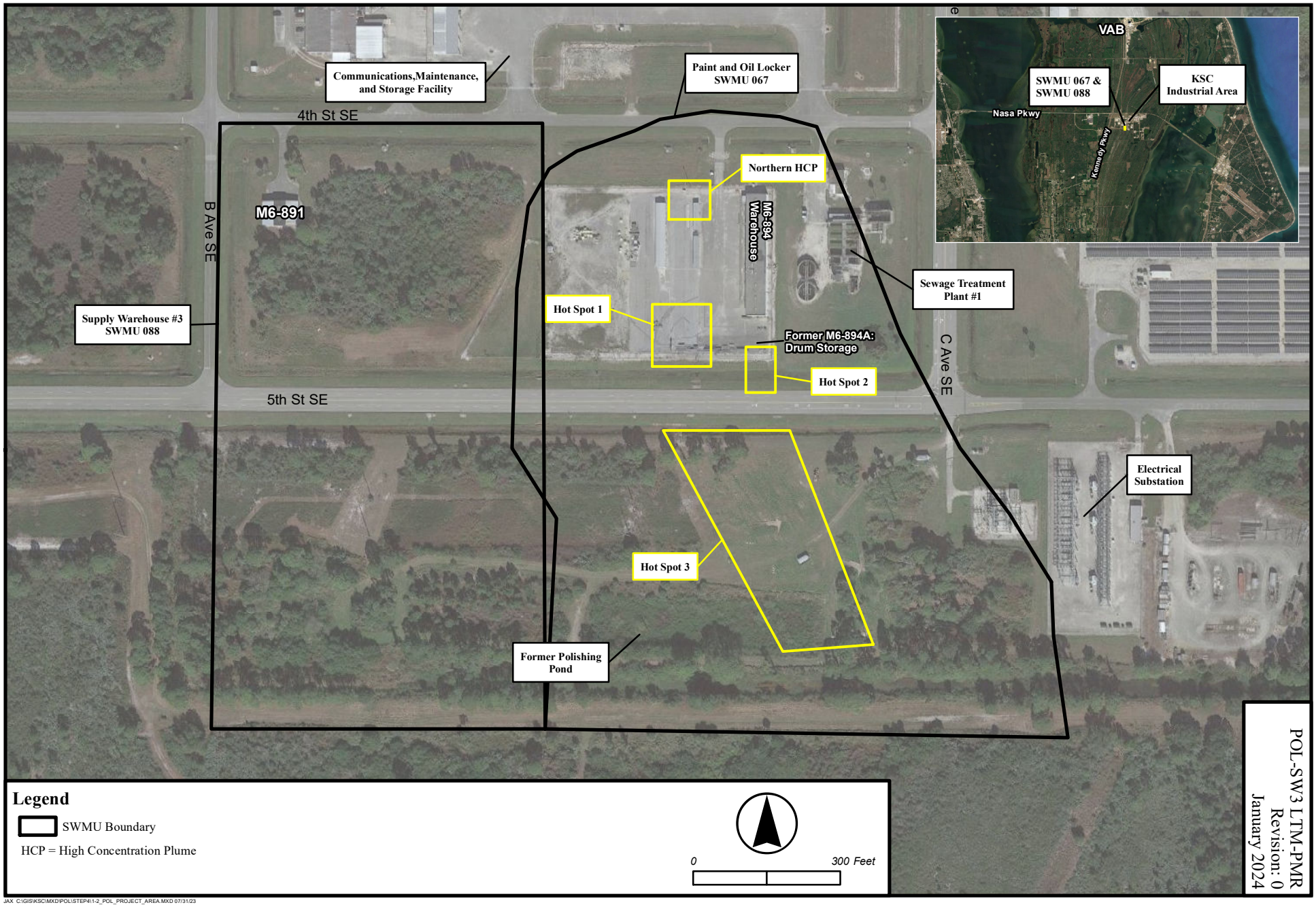
FIGURE 1-1 SUPPLY WAREHOUSE #3 AND PAINT AND OIL LOCKER AREA LOCATION

SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



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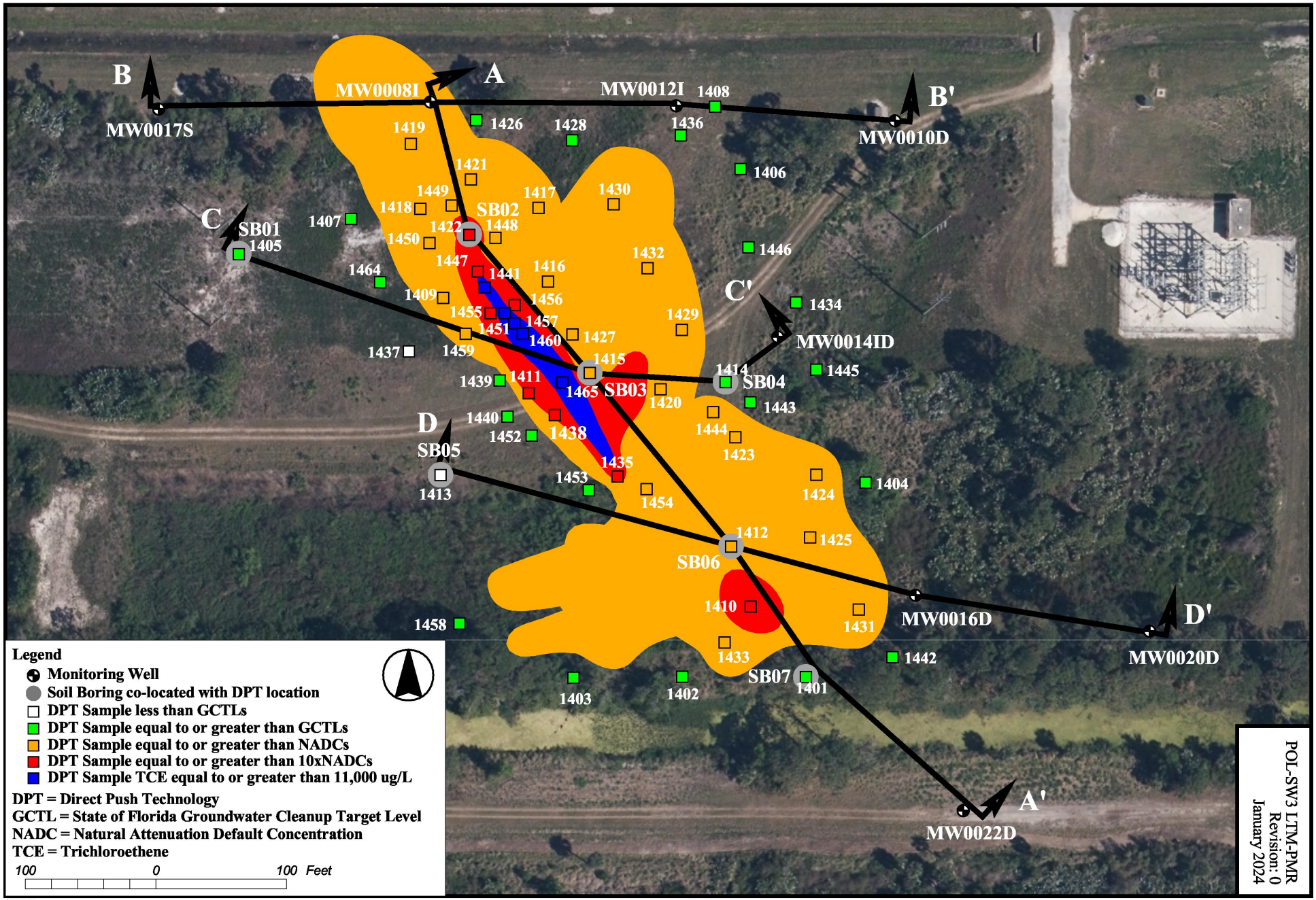
FIGURE 1-2 PROJECT AREA
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



POL-SW3 LTM-PMR
Revision: 0
January 2024

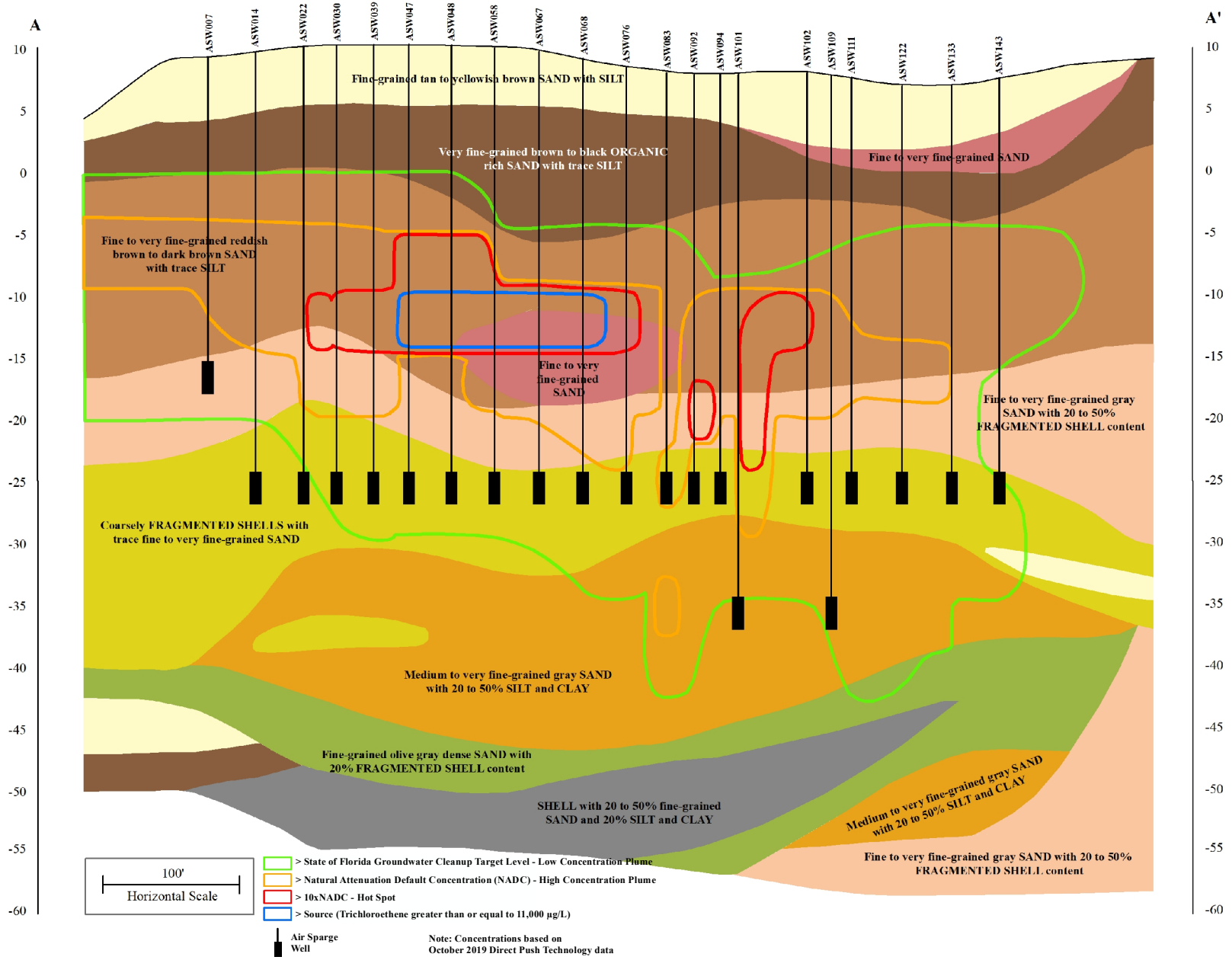
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FIGURE 1-3 CROSS SECTION LOCATIONS - OCTOBER 2019 DPT POL SOUTHERN TREATMENT AREA BASELINE EVENT
SWMU 067, KENNEDY SPACE CENTER, FLORIDA



POL-SW3 LTM-PMR
Revision: 0
January 2024

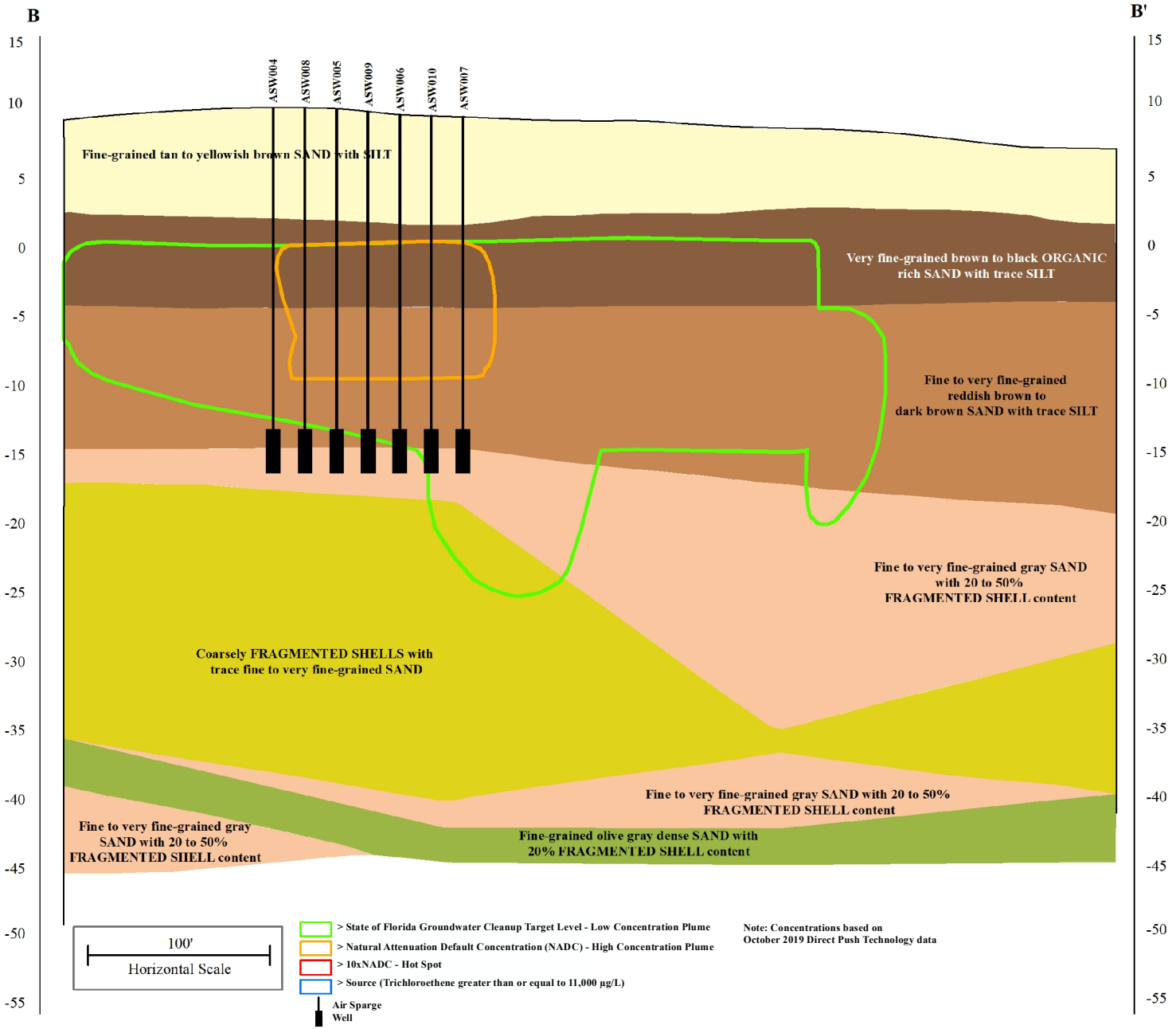
FIGURE 1-4 CROSS SECTION A - A'
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



POL-SW3 LTM-PMR
Revision: 0
January 2024

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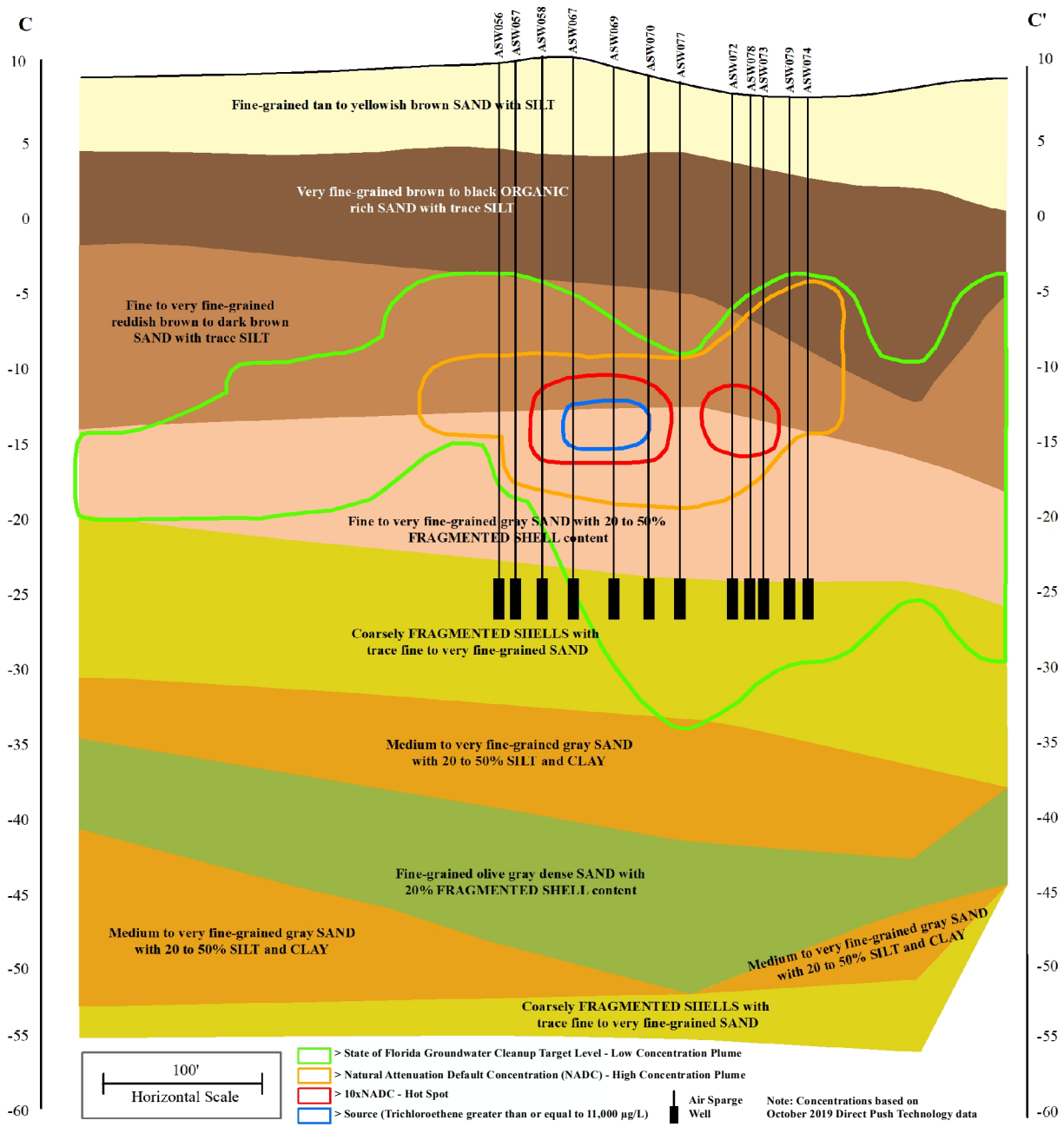
FIGURE 1-5 CROSS SECTION B - B'
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



POL-SW3 LTM-PMR
Revision: 0
January 2024

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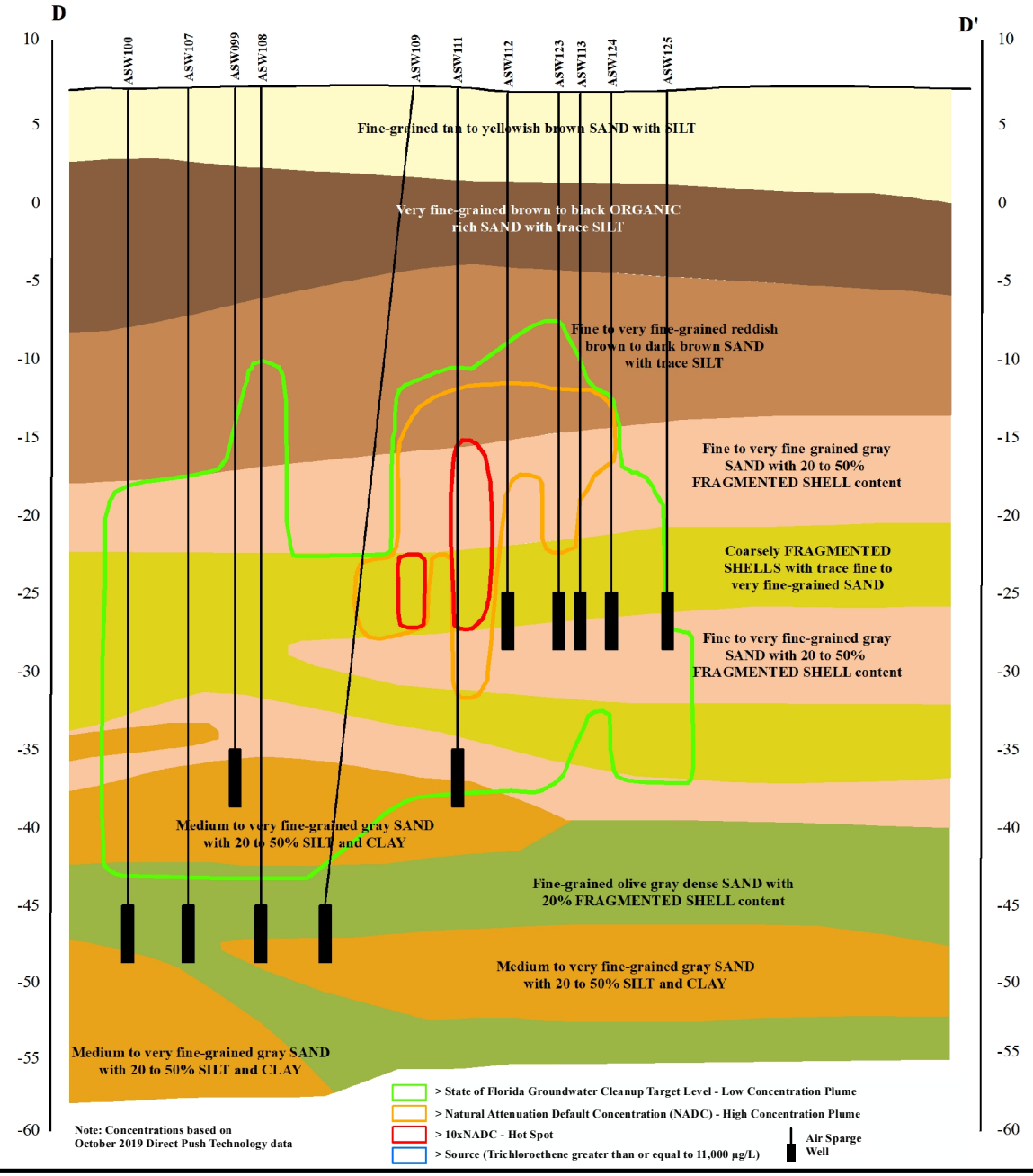
FIGURE 1-6 CROSS SECTION C - C'
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



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POL-SW3 LTM-PMR
Revision: 0
January 2024

FIGURE 1-7 CROSS SECTION D - D'
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



POL-SW3 LTM-PMR
Revision: 0
January 2024

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SECTION II
SYSTEM OPERATION & MAINTENANCE - POL SOUTHERN TREATMENT AREA

This section summarizes operations and maintenance of the AS system from September 2022 to July 2023.

2.1 OPERATIONAL SUMMARY

Startup of the AS system at POL Southern Treatment Area occurred between January 26, 2021, and February 19, 2021. The original remedial design included 145 AS wells distributed across eight operating zones. However, between January and March 2022, all the AS wells in Zone 1 (11 wells), Zone 2 (22 wells), along with wells in Zone 3 (11), and Zone 4 (12) were turned off due to short circuiting occurring in the south ditch on 5th Street SE. These AS wells remained off during this reporting period. The Year 2 operational AS network along with the monitoring well network is shown on Figure 2-1. Table 2-1 includes the pulse cycle schedule for each zone operated during the reporting period, design flow rates, and total volume distributed to each zone.

The AS system is monitored remotely, with monthly site visits to confirm the remote monitoring data. In addition, flow rates to individual AS wells are checked during site visits and adjusted as needed to maintain the design flow rate of 5 cfm. Appendix A contains the monthly AS well balance forms. The design pressures at the distribution manifold were met for each respective depth: 19.5 pound per square inch (psi) (shallow); 26.7 psi (shallow-intermediate); 32.2 psi (intermediate), and 38.4 psi (deep).

The AS system was shut down or partially shut down for a total of 64 days this reporting period (Year 2) for PM and maintenance activities. The AS system was shut down approximately one week prior to the groundwater monitoring well sampling events in December 2022 and March 2023. The system remained operational during the October 2022 PM event since all the sampled wells were located outside the radius of influence (ROI) of the AS network. In June 2023, the AS system was removed, so no sparging had occurred for approximately one month before the July 2023 sampling event. Additional system shutdowns during Year 2 IM operation included:

- **Hurricane Shutdowns –** The AS system was powered down during two hurricanes: Hurricane Ian on September 27, 2022 and Hurricane Nicole on November 28, 2022.

- **Electrical Fault –** On February 28, 2023, the AS system shut down due to an unknown electrical fault. No repairs were needed.

- **Compressor Maintenance –** On June 6, 2023, the system was shut down for routine 4,000-hour compressor filter and oil change.

A summary of system runtime and system downtime during Year 2 is provided in Table 2-2. The overall runtime over the reporting period (September 2022 through June 2023) was 83 percent. During the October 2022 KSCRT meeting, consensus was reached to continue operation of the AS system at least through March 2023 to further reduce COC concentrations (Meeting Minute 2210-M12, Decision D13). The system remained operational until June 2023, when it was removed from the site to be utilized at Launch Complex 39B. The AS header lines were capped, and the piping network was left in place in the event that further treatment would be necessary.

2.2 MAINTENANCE ACTIVITIES

From September 2022 to June 2023, monthly site visits were performed by a field technician, per the POL IWP (NASA, 2020). During each visit, the following activities were conducted:

- Inspection of the AS system for leakage and excessive vibration, noise, or temperature.

- Inspection of the condensate treatment system (air water separator).

- Inspection of the refrigerated air dryer.

- Assessment of differential pressure across filtration units and process equipment.

- Recording of system operational data and comparing data to design conditions and previous operating data.

- Performing housekeeping.

Other than a scheduled 4,000-hour oil and filter change in June 2023, there were no other maintenance activities required or performed during the reporting period.

Table 2-1. Pulse Cycle Schedule

Zone [Based on Interval]	Zone Number	Number of AS Wells	Number of AS Operating	Flow Per Well (cfm)	Total Zone Flow (cfm)	Time						Operational Hours/Day	cf/day
						0:00	4:00	8:00	12:00	16:00	20:00		
Shallow 1 [S1]	Zone 1	11	0	0	0	-	-	-	-	-	-	0	0
Shallow Intermediate 1 [SI1]	Zone 2	22	0	0	0	-	-	-	-	-	-	0	0
Shallow Intermediate 2 [SI2]	Zone 3	22	11	5	55	55	-	-	55	-	-	8	26,400
Shallow Intermediate 3 [SI3]	Zone 4	22	10	5	50	-	50	-	-	50	-	8	24,000
Shallow Intermediate 4 [SI4]	Zone 5	22	22	5	110	-	110	-	-	110	-	8	52,800
Intermediate 1 [I1]	Zone 6	17	17	5	85	-	-	85	-	-	85	8	40,800
Deep 1 [D1]	Zone 7	14	14	5	70	-	-	70	-	-	70	8	33,600
Deep 2 [D2]	Zone 8	15	15	5	75	-	-	75	-	-	75	8	36,000
Total AS Wells		**145**		**Total Flow (cfm)**		**55**	**160**	**230**	**55**	**160**	**230**		**213,600**
Total AS Wells Operating			**89**	Within System		Under	Under	Under	Under	Under	Under	(Target 90%)	
				Compressor Duty		16%	46%	66%	16%	46%	66%		
				Wells Operating		11	32	46	11	32	46		

Notes:
System Compressor: Atlas Copco GA 75VSD (75 HP) 230/460V/3P motor operating at 350 cfm at 90 psi
AS = air sparge
cfm = cubic feet per minute
cf = cubic feet
Between January and March 2022, all of Zone 1 and Zone 2, 11 wells in Zone 3 and 12 wells in Zone 4 were shut off due to short circuiting in the 5th Street SE south ditch. These wells remained off due to consistent results below the method detection limit for all contaminants of concern in performace monitoring wells in the area.

Table 2-2. Air Sparge System Operation Runtime

Operational Reporting Period	Total Available Time			System Operational Time				Downtime Contributing Factor
	Month	Days in Month	Hours in Month	Downtime (day)	Downtime (hour)	Runtime (hour)	Runtime (%)	
Year 2: September 2022 through July 2023	Sep-22	30	720	3.0	72	648	90%	Powered down due to Hurricane Ian.
	Oct-22	31	744	0.0	0	744	100%	No downtime occurred.
	Nov-22	30	720	6.0	144	576	80%	Powered down due to Hurricane Nicole.
	Dec-22	31	744	14.5	348	396	53%	Powered down for performance sampling.
	Jan-23	31	744	0.0	0	744	100%	No downtime occurred.
	Feb-23	28	672	18.0	432	240	36%	System down for unknown eletrical fault.
	Mar-23	31	744	9.5	228	516	69%	Shut down for performance sampling.
	Apr-23	30	720	0.0	0	720	100%	No downtime occurred.
	May-23	31	744	0.0	0	744	100%	No downtime occurred.
	Jun-23	30	720	1.4	34	686	95%	4k compressor maintenance; Powered down and moved to Pad B.
	Year End Total	**303**	**7,272**	**52.4**	**1,258**	**6,014**	**83%**	

FIGURE 2-1 YEAR 2 AIR SPARGING LAYOUT AND PERFORMANCE MONITORING NETWORK
SWMU 067, POL, KENNEDY SPACE CENTER, FLORIDA

Legend

Monitoring Well

POL-MW0042SI [18-23] Sampled Semiannually

POL-MW0017S [11-16] Sampled Annually

POL-MW0041SI [18-23] Not Sampled

ASW Zone

- 1 (All Wells Off)
- 2 (All Wells Off)
- 3 (11 Wells Off)
- 4 (12 Wells Off)
- 5
- 6
- 7
- 8

ASW Operational During Year 2
Depth, ROI (feet)

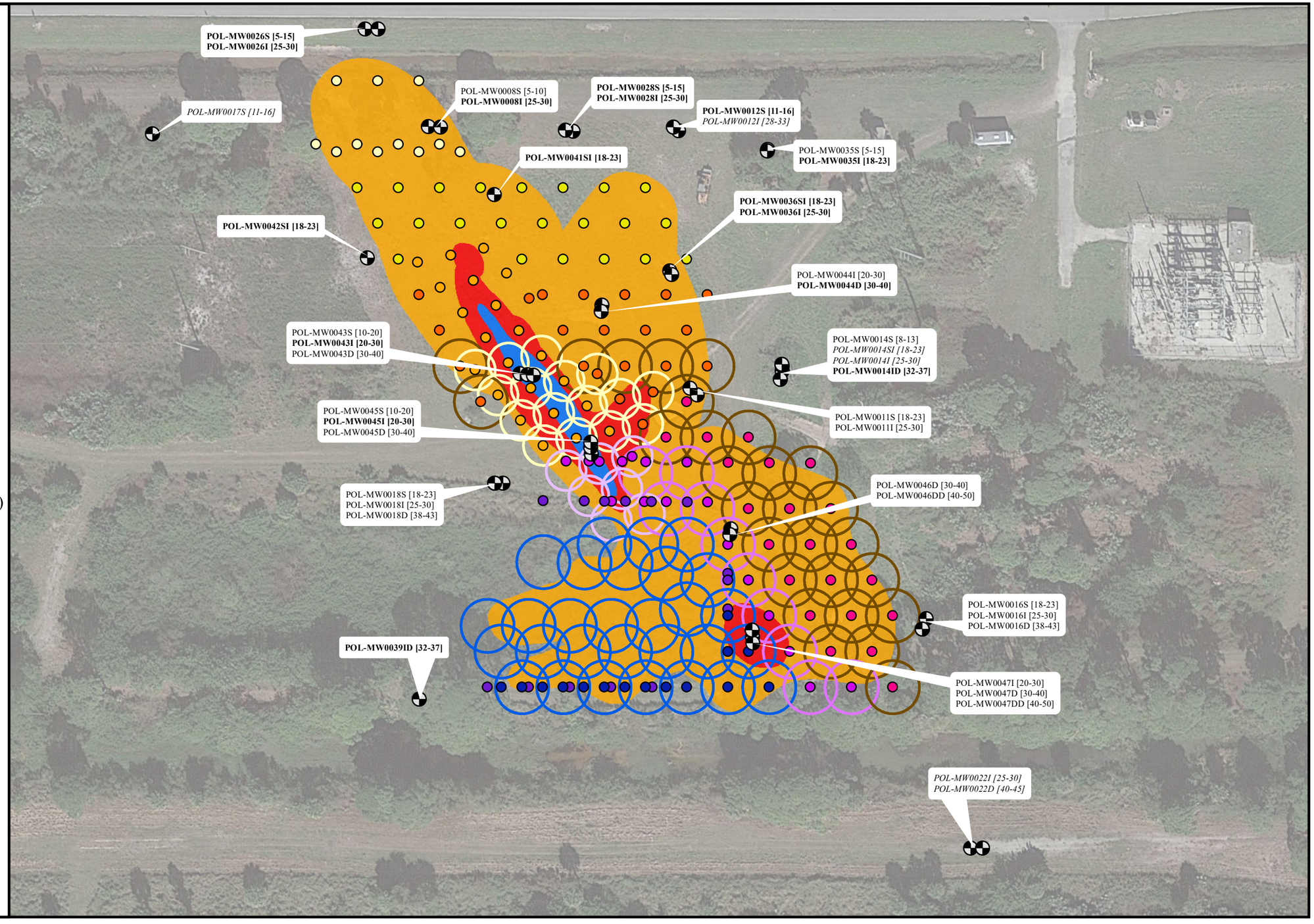
- 35, 15
- 35, 20
- 45, 20
- 45, 15
- 55, 20

TCE Concentrations µg/L (October 2019)

- Source Zone TCE 11,000 µg/L
- 10xNADC
- NADC

[7-17] - Screen Depth Interval in feet below land surface
ASW - Air Sparge Well
GCTL - State of Florida Groundwater Cleanup Target Level
NADC - Natural Attenuation Default Concentration
POL - Paint and Oil Locker
ROI - Radius of Influence
µg/L - micrograms per liter

0 75 150 Feet



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SECTION III
PERFORMANCE MONITORING - POL SOUTHERN TREATMENT AREA

PM was conducted to evaluate IM progress, determine whether the AS system was operating properly, and determine whether additional actions or adjustments were needed. This section discusses the PM program to evaluate the progress and performance of the POL AS IM during the second year of IM operation and includes the initial monitoring event following final system shut down activities.

As stated in Section 2.1, zones with monitoring wells located within the ROI of the AS network were shut down approximately one week prior to each groundwater sampling event. Ambient air sampling was conducted on January 9, 2023, while the system was operational to assess breathing zone conditions in the vicinity of AS operations.

Year 2 PM activities and results were presented to the KSCRT during the October 2023 meeting (Meeting Minute 2310-M16).

3.1 GROUNDWATER LEVEL GAUGING

The PM wells are categorized by their screened interval within the surficial aquifer system:

- Shallow Zone (0 to 20 feet bls)
- Intermediate Zone (20 to 30 feet bls)
- Deep Zone (30 to 50 feet bls)

Groundwater levels were gauged prior to sample collection during each performance monitoring event. A summary of the water level measurements are presented in Table 3-1. Prior to gauging, all monitoring wells were uncapped to allow for equilibration of hydrostatic and atmospheric pressure. Depth-to-water was then measured from the permanent survey point located on top of the well casing to maintain consistency with historical measurements. Depth-to-water was measured to the nearest 0.01 foot using an electronic water level meter. To calculate the groundwater elevation, the depth-to-water was subtracted from the top-of-casing elevation, previously determined by a land survey. The groundwater elevation data was used to create

potentiometric surface maps for the three aquifer zones using manual contouring methods for the December 2022, March 2023, and July 2023 events[2]. These are presented on Figures 3-1 to 3-8 and illustrate the interpreted behavior of groundwater flow specific to each zone at the time of each sampling event[3].

The following sections present a detailed discussion of the groundwater flow as AS system operations progressed within the Southern Treatment Area during the second year of operation.

3.1.1 Groundwater Flow in the Shallow Zone. Fourteen Shallow Zone monitoring wells were gauged in December 2022, with the resulting groundwater contours provided on Figure 3-1. The data set included monitoring wells to the south, allowing an expanded view of Shallow Zone groundwater trends. The data from the December 2022 event indicate divergent flow in Shallow Zone in the vicinity of 5th Street SE to the west and southeast, at a hydraulic gradient of approximately $5x10^{-3}$ feet per foot, separated by a ridge of groundwater mounding culminating to the south at well POL-MW0008S. At POL-MW0008S, radial flow was observed to the northwest at a hydraulic gradient of approximately $6x10^{-3}$ feet per foot, to the west at a hydraulic gradient of approximately $5x10^{-3}$ feet per foot, and to the southeast at an increased hydraulic gradient of approximately $1x10^{-2}$ feet per foot. A groundwater low was observed running north to south from well POL-MW0028S to well POL-MW0045S, respectively, in the vicinity of the manifold trailer.

Six Shallow Zone monitoring wells were gauged in March 2023, with the resulting groundwater contours provided on Figure 3-2. As shown, these data are similar to the December 2022 data and indicate Shallow Zone groundwater in the vicinity of 5th Street SE exhibits mounding near the center of the road at well POL-MW0031S and flowing radially away to the north, west, and south at hydraulic gradients of approximately $9x10^{-3}$ feet per foot, $6x10^{-4}$ feet per foot, and $2x10^{-2}$ feet per foot, respectively. Similar to the December 2022 data, the March 2023 data indicated a southeastern and southwestern bend in groundwater flow toward the center of the

[2] Groundwater contours were not produced for all three intervals for the October 2022 sampling event or the deep interval for the March 2023 sampling event due to insufficient data.
[3] Monitoring wells at SW3, POL Northern Area, and POL Southern Treatment Area were gauged in June 2023 to provide sitewide groundwater level data. This event occurred 13 days after the AS system was decommissioned at POL Southern Treatment Area.

Southern Treatment Area. However, there was not enough data points available towards the south to provide further evidence for this trend.

Nineteen Shallow Zone monitoring wells were gauged in June 2023, with the resulting groundwater contours provided on Figure 3-3. These measurements were taken 13 days after final system shutdown. The June 2023 data indicate that groundwater generally flowed from north of the POL facility southward toward the Southern Treatment Area in the Shallow Zone. Mounding observed in December 2022 and March 2023 continued in June 2023 at well POL-MW0008S, with radial flow to the northwest, northeast, and southeast at hydraulic gradients of approximately $9x10^{-3}$, $6x10^{-3}$, and $3x10^{-3}$ feet per foot, respectively. At well POL-MW0031S, the mounding observed in March 2023 developed into an area of convergence in June 2023 with well POL-MW0008S marking the high point at a hydraulic gradient of approximately $6x10^{-3}$ feet per foot, and flow from the area of the POL facility (and former northern HCP) was observed at a hydraulic gradient of approximately $5x10^{-3}$ feet per foot. During the June 2023 event, flow generally continued to the south at a decreased hydraulic gradient of $2x10^{-3}$ feet per foot, toward the area of the manifold trailer.

In summary, it appears mounding observed within the Shallow Zone was probably induced by operation of the AS system, which resulted in convergence toward the center of the site including the area of the manifold trailer. Continued mounding and flow toward the center of the northwestern branches of the AS well network was observed two weeks after system shut-off. Groundwater flow patterns, post-system shutdown, will continue to be evaluated during future sampling events.

3.1.2 Groundwater Flow in the Intermediate Zone. Nineteen Intermediate Zone monitoring wells were gauged in December 2022, with the resulting groundwater contour map provided as Figure 3-4. The figure shows that groundwater within the Intermediate Zone generally flowed to the southeast, with a slight depression and convergence toward well POL-MW0044I. During this synoptic event, hydraulic gradients were approximately $3x10^{-3}$ feet per foot from upgradient well POL-MW0026I to downgradient well POL-MW0044I, showing a southeastern flow. In the area of POL-MW0044I, a depression was observed. Groundwater flow appeared to continue in a

southeastern direction near the manifold trailer to POL-MW0016I at a hydraulic gradient of approximately $2x10^{-3}$ feet per foot.

Six Intermediate Zone monitoring wells were gauged in March 2023, with the resulting groundwater contour map provided as Figure 3-5. The March 2023 data indicate groundwater flowed predominantly towards the southeast at a uniform hydraulic gradient of approximately $1x10^{-3}$ feet per foot. This flow analysis was based on limited data points, oriented predominantly along a northwest to southeast line across the treatment area.

Thirty-nine Intermediate Zone monitoring wells were gauged in June 2023. The number of data points was substantially increased to include SW3 wells to the north and west of the Southern Treatment Area. These measurements were taken 13 days after final system shutdown. The resulting contour map is provided as Figure 3-6. The June 2023 data indicate that groundwater flow was generally from the POL facility to the southwest, to the south, and to the southeast. Specifically, groundwater flow was observed from the western edge of the paved area of the POL facility to the southwest, bending to the west at an overall hydraulic gradient of approximately $1x10^{-3}$ feet per foot. Similarly, as flow became more southerly toward the center of the Southern Treatment Area, the hydraulic gradient decreased to approximately $5x10^{-4}$ feet per foot from well SW3-MW0005 to well SW3-MW0033, then increased to approximately $1x10^{-3}$ feet per foot as flow became more southerly. From the southern edge of the POL facility fence line, southeastern groundwater flow was observed across the Southern Treatment Area toward the manifold trailer at a hydraulic gradient of approximately $2x10^{-3}$ feet per foot.

In summary, Intermediate Zone contours developed from the sitewide event in June 2023 appear to be relatively consistent with previous contouring events in Year 2, as well as baseline and Year 1, indicating generally consistent groundwater flow throughout operation of the AS IM. Groundwater flow patterns, post-system shutdown, will be evaluated during future sampling events.

3.1.3 Groundwater Flow in the Deep Zone. In December 2022, groundwater levels were measured in 12 Deep Zone monitoring wells located within the southern area of the Southern Treatment Area. The groundwater contours for this event are shown on Figure 3-7. The figure

indicates Deep Zone groundwater flow towards a hydraulic depression at the southeastern corner of the Southern Treatment Area where groundwater flow converges radially to the southeast, south, and southwest, toward the hydraulic low encompassing wells POL-MW0047D and POL-MW0016D and to the northwest from well POL-MW0022D. The hydraulic gradient increased from northwestern well POL-MW0043D, about 200 feet to the northwest, at approximately $1x10^{-3}$ feet per foot to $6x10^{-3}$ feet per foot within a 60-foot radius of well POL-MW0047D.

In March 2023, synoptic water levels were measured at only two Deep Zone wells (POL-MW0014ID and POL-MW0022D), so a groundwater flow analysis could not be performed.

In June 2023, groundwater levels were gauged in 23 monitoring wells representing most of the POL study areas. These measurements were taken 13 days after final system shutdown. The resulting groundwater contours are shown on Figure 3-8. The figure illustrates a general Deep Zone flow trend to the southeast toward the electrical substation and to the southwest toward the SW3 area. Groundwater flows to the southeast and southwest at a hydraulic gradient of approximately $1x10^{-3}$ feet per foot. A hydraulic high with radial flow is indicated in the western section of the area in the vicinity of well SW-MW0028 and well SW3-MW0027, with hydraulic gradients ranging from $2x10^{-3}$ to $4x10^{-3}$ feet per foot. Radial flow was not observed in the southeastern corner of the area, as was noted in December 2022. However, groundwater mounding became evident in the southern area of SW3 during the June 2023 event and radial flow was observed at wells SW3-MW0008 and SW3-MW0027.

In summary, the Deep Zone contours developed from the sitewide event in June 2023 appear to be relatively consistent with previous contouring events in Year 2, as well as baseline and Year 1, indicating generally consistent groundwater flow throughout the AS IM. Groundwater flow patterns, post-system shutdown, will be evaluated during future sampling events period.

3.2 GROUNDWATER SAMPLING ACTIVITIES

Groundwater PM sampling was conducted during four separate sampling events during Year 2 of AS operation. The four events were conducted in October 2022, December 2022, March 2023, and July 2023. During this reporting period the following sampling events were conducted:

- October 2022: Sampling of 7 semi-annual PM wells (3 shallow wells, 3 intermediate wells, and 1 deep well).

- December 2022: Sampling of 8 semi-annual PM wells (7 intermediate wells and 1 deep well).

- March 2023: Annual PM sampling of 13 monitoring wells (4 shallow wells, 7 intermediate wells, and 2 deep wells).

- July 2023: Sampling of 15 semi-annual monitoring wells (3 shallow wells, 10 intermediate wells, and 2 deep wells).

Year 2 PM program monitoring wells and sampling rationales are presented in Table 3-2. Groundwater samples were collected using low-flow sampling techniques at each sample location (Figure 2-1). Monitoring well purging and sampling activities were conducted in accordance with the Sampling and Analysis Plan (SAP) for the RCRA Corrective Action Program at KSC (NASA, 2017b) and FDEP Standard Operating Procedures (SOPs). Purge logs and sampling field notes are included in Appendix B. All purge and decontamination water generated through sampling was containerized into totes, characterized, and determined to be non-hazardous, prior to being transferred to KSC's investigation-derived waste (IDW) treatment system located in the Components Cleaning Facility (CCF) East Area, per KSC's IDW disposal protocols.

All groundwater samples collected during the Year 2 sampling events were analyzed by Eurofins Environmental Testing Southeast, LLC in Altamonte Springs, Florida, for VOCs by United States Environmental Protection Agency (USEPA) Method 8260B during the October 2022 sampling event and USEPA Method 8260D during the December 2022, March 2023, and July 2023 sampling events. Based on past sampling events, unpreserved vials were also collected due to the potential for excess effervescing in the preserved samples. Chain-of-custody forms and laboratory analytical results for all groundwater samples are provided in Appendix C.

3.3 GROUNDWATER FIELD MEASUREMENTS

Groundwater was purged using low-flow techniques and groundwater quality parameters were recorded until the readings stabilized in accordance with FDEP's SOP for Field Sampling (FS2200) (FDEP, 2017) to ensure that the samples were representative of aquifer conditions. At each well, temperature, pH, specific conductance, dissolved oxygen (DO), turbidity, and oxidation reduction potential (ORP) were recorded and are shown on sample log sheets (Appendix B). The final stabilization readings are summarized in Table 3-3. The groundwater quality parameters observed for each well were generally consistent with historical values. Irregularities are mentioned below, if observed.

During the October 2022 sampling event, water quality parameters were measured in six wells. Temperature values ranged from 25.93 to 32.16°C, with an average of 28.44°C. Readings of pH ranged from 3.25 to 6.51, with an average of 5.33. Specific conductance ranged from 143.4 to 3,218.4 microSiemens per centimeter (µS/cm), with an average of 1,187.3 µS/cm. DO values varied from 0.01 to 2.98 milligrams per liter (mg/L), with an average value of 0.52 mg/L. Turbidity readings ranged from 0.98 to 36.12 nephelometric turbidity units (NTU), with an average value of 13.24 NTU. For well MW0028S, five screened interval volumes were purged to achieve stable conditions, per FDEP SOPs (FDEP, 2017). Although remaining above the 20 NTU stabilization limit, all other parameters were stable in this well, and therefore purging was discontinued. ORP readings ranged from -82.8 to 262.3 millivolt (mV), with an average reading of 40.64 mV.

During the December 2022 sampling event, water quality parameters were measured in eight wells. Temperature values ranged from 24.20 to 26.50°C, with an average of 25.41°C. Readings of pH ranged from 3.29 to 6.42, with an average of 4.51. Specific conductance ranged from 947.0 to 3,387.0 µS/cm, with an average of 2,472.4 µS/cm. DO values varied from 0.05 to 3.62 mg/L, with an average of 0.73 mg/L. Turbidity readings ranged from 0.00 to 18.10 NTU, with an average of 4.11 NTU. ORP readings ranged from -74.5 to 406.9 mV, with an average reading of 127.1 mV.

During the March 2023 sampling event, water quality parameters were measured for 12 wells. Well MW0026S had out of tolerance values for turbidity, and therefore the water quality parameters from this well are not included in following discussion. In the remaining wells, temperatures ranged from 23.30 to 27.30°C, with an average of 24.87°C. Readings of pH ranged from 3.83 to 7.33, with an average of 6.35. Specific conductance ranged from 644.0 to 3,460.0 µS/cm, with an average of 1,497.5 µS/cm. DO values varied from 0.04 to 1.14 mg/L, with an average of 0.22 mg/L. Turbidity readings ranged from 1.33 to 10.33 NTU, with an average of 4.72 NTU. ORP readings ranged from -128.8 mV to 317.4 mV, with an average of -56.7 mV.

During the July 2023 sampling event, water quality parameters were measured in 14 wells, with well MW0026S again having out of tolerance values for turbidity and not included in the evaluation below. Groundwater temperatures ranged from 25.90 to 30.00°C, with an average of 27.82°C. Readings of pH ranged from 3.10 to 6.76, with an average of 4.91. Specific conductance ranged from 102.7 to 4,727.0 µS/cm, with an average of 1,902.3 µS/cm. DO values varied from 0.07 to 0.41 mg/L, with an average of 0.19 mg/L. Turbidity readings ranged from 5.44 to 14.60 NTU, with an average of 7.59 NTU. ORP readings ranged from -748.0 to 416.1 mV, with an average reading of 76.8 mV.

3.4 GROUNDWATER ANALYTICAL RESULTS

PM groundwater samples were collected and analyzed in accordance with the Year 2 sampling plan as noted in Section 3.2. A summary of results for the Year 2 sampling events for the COCs is presented in Table 3-4. The groundwater sampling log sheets are provided in Appendix B, and the laboratory analytical reports are provided in Appendix C. Isoconcentration maps showing groundwater plumes[4] and analytical results for the Shallow Zone, Intermediate Zone, and Deep Zone of the surficial aquifer, are included as Figures 3-9, 3-10, and 3-11, respectively.

The following discussions present the results for the target COCs for each event by surficial aquifer zone[5]. Although not included in the following evaluation, acetone, toluene, and 1,1-

[4] Plumes delineated based off most recent sample results.
[5] MW0026S is part of the POL Southern Treatment Area PM network (semi-annual schedule) and also the POL Northern Area LTM sampling network (annual schedule) and is therefore included in the discussions below and also later in Section IV.

dichloroethene were detected at concentrations less than respective GCTLs. Methylene chloride, a common laboratory contaminant, was detected at a concentration of 34 µg/L, greater than the GCTL of5 µg/L and was flagged by the laboratory as possible lab contamination. All results can be found in the laboratory analytical reports in Appendix C.

3.4.1 October 2022 Performance Monitoring.

Shallow Zone: Three monitoring wells (MW0012S, MW0026S, and MW0028S) were sampled in the Shallow Zone during the October 2022 event. In MW0028S, all results were either detected at concentrations less than GCTLs or were not detected above laboratory method detection limits (MDLs). TCE and tDCE results were either detected at concentrations less than their respective GCTLs or were not detected in the samples collected from MW0012S and MW0026, consistent with previous events. Note, the sample collected from MW0026S was analyzed out of hold time due to a laboratory s error; however, because concentrations were consistent with historical results\, the data are considered usable for the purposes of monitoring groundwater conditions at this location.

cDCE was detected at a concentration greater than the GCTL in one of the three monitoring wells, MW0026S, at a concentration of 100 µg/L. This result represents a decrease from the previous event (140 µg/L in April 2022), but an increase since it was incorporated into the PM network (less than the GCTL in November 2020).

VC was detected at a concentration greater than the GCTL in well MW0026S at 11 µg/L, representing a decrease from the previous event (18 µg/L in March 2022). At this well, VC results have continually fluctuated at levels greater than the GCTL. In MW0012S, VC also exceeded the GCTL with a concentration of 17 µg/L. This result represents an increase since the prior event (9.9 µg/L in March 2022) and the highest concentration since the well was incorporated in the PM network in September 2021.

Intermediate Zone: Three wells (MW0026I, MW0028I, and MW0035SI) were sampled in the Shallow Zone during the October 2022 event All COCs were either not detected or were detected at concentrations less than GCTLs.

Deep Zone: One monitoring well (MW0014ID) was sampled in the Deep Zone during the October 2022 event and results for all COCs were either not detected or were detected at concentrations less than their respective GCTLs.

3.4.2 December 2022 Performance Monitoring.

Shallow Zone: Shallow monitoring wells were not sampled per the sampling schedule presented during the October 2022 KSCRT Meeting (NASA, 2022).

Intermediate Zone: Seven monitoring wells (MW008I, MW0036SI, MW0036I, MW0041SI, MW0042SI, MW0043I, and MW0045I) were sampled in the Intermediate Zone during the December 2022 event. In all seven samples, cDCE and tDCE, were either not detected or were detected at concentrations less than their respective GCTLs and VC was not detected.

TCE was detected at a concentration greater than the GCTL in MW0042SI and MW0043I at 9.9 µg/L and 3.7 µg/L, respectively. TCE in well MW0042SI exceeded the GCTL during the past six sampling events; however, concentrations have remained similar to the December 2022 result. Former SZ monitoring well MW0043I had a slight decrease of TCE from the previous event (6.2 µg/L in June 2022), but a significant decrease from baseline (10,000 µg/L in August 2020). TCE results at the remaining five wells were non-detect or detected at a concentration less than the GCTL.

Deep Zone: One monitoring well (MW0014ID) was sampled in the Deep Zone during the December 2022 event, and all COCs concentrations were either non-detect or were detected at concentrations less than their respective GCTLs.

3.4.3 March 2023 Performance Monitoring.

Shallow Zone: All four Shallow Zone monitoring wells (MW0012S, MW0017S, MW0026S, and MW0028S) were sampled during the March 2023 event. All COC results from MW0012S, MW0017S, and MW0028S were either non-detect or were detected at concentrations less than their respective GCTLs. At MW0012S, it is worth noting that this was the first time VC has been below the GCTL in this well since it was incorporated into PM network in September 2021.

cDCE was detected greater than the GCTL in monitoring well MW0026S at 110 µg/L, a slight increase from the previous event (100 µg/L in October 2022).

VC was detected greater than the GCTL in monitoring well MW0026S at 14 µg/L. Like cDCE, the VC concentration slightly increased from October 2022 (11 µg/L).

TCE and tDCE results were detected at concentrations less than their respective GCTLs in monitoring well MW0026S.

Intermediate Zone: Seven PM wells (MW0012I, MW0014SI, MW0014I, MW0022I, MW0026I, MW0028I, and MW0035SI) were sampled in the Intermediate Zone during the March 2023 event and all COC results were either non-detect or were detected at concentrations less than their respective GCTLs.

Deep Zone: Two PM wells (MW0014ID and MW0022D) were sampled in the Deep Zone during the March 2023 event and all COC results were either non-detect or were detected at concentrations less than their respective GCTLs.

3.4.4 July 2023 Performance Monitoring.

Shallow Zone: The same three shallow monitoring wells (MW0012S, MW0026S, and MW0028S) sampled in October 2022 were sampled during the July 2023 event. Wells MW0012S and MW0028S had all COC results that were either non-detect or were detected at concentrations less than their respective GCTLs.

cDCE was detected greater than the GCTL in monitoring well MW0026S at 100 µg/L, a slight decrease from the previous event (110 µg/L) conducted during March 2023.

VC was detected greater than the GCTL in monitoring well MW0026S at 8.3 µg/L. Like cDCE, the VC concentration slightly decreased from March 2023 (14 µg/L).

TCE and tDCE continued to be detected at concentrations below their respective GCTLs in monitoring well MW0026S.

Intermediate Zone: Ten monitoring wells (MW0008I, MW0026I, MW0028I, MW0035SI, MW0036SI, MW0036I, MW0041SI, MW0042SI, MW0043I, and MW0045I) were sampled in the Intermediate Zone during the July 2023 event. MW0041SI and MW0043I were the only wells with COC results, specifically TCE, greater than the GCTL. All COC results at the remaining wells were either non-detect or were detected at concentrations less than their respective GCTLs.

TCE was detected greater than the GCTL in wells MW0041SI and MW0043I at 3.6 µg/L and 10 µg/L, respectively. MW0041SI has not had a detection of TCE greater than the GCTL since the baseline sampling event (4 µg/L in April 2020). Well MW0043I experienced a slight increase in TCE compared to the previous event this period (December 2022), but concentrations remain significantly lower than baseline (10,000 µg/L in April 2020). Note, TCE did not exceed the GCTL in well MW0042SI during this event in July 2023, a decrease since concentrations consistently exceeded the GCTL from the baseline sampling event until December 2022.

cDCE, tDCE, and VC results at wells MW0041SI and MW0043I were either non-detect or were detected at concentrations less than their respective GCTLs.

Deep Zone: Two PM wells (MW0014ID and MW0044D) were sampled in this zone during the July 2023 event and all COC results were non-detect.

3.5 AMBIENT AIR SAMPLING AND ANALYTICAL RESULTS

Ambient air samples were collected from five locations (POL-AMB05 through POL-AMB09) on January 9, 2023. The air sample locations are shown on Figure 3-12.

The air samples were collected using a 6-liter Summa canister and an 8-hour composite pressure regulator. The Summa canister samples were analyzed by Eurofins Environmental Testing Southeast, LLC in Altamonte Springs, Florida, using USEPA Method TO-15. These samples were collected for health and safety monitoring and to verify compliance with the KSC Title V Air Operation Permit.

Laboratory analytical results for TCE, cDCE, tDCE, and VC were compared to available Occupational Safety and Health Administration Permissible Exposure Limits and Threshold Limit Values established by the American Conference of Governmental Industrial Hygienists. There were no detections in the air samples collected in January 2023. The results are shown in Table 3-5. Results from air samples collected from the same five locations in January 2021 (pre-startup) and January 2022 (Year 1 of operation) also had no detections, as shown in Table 3-5.

3.6 PERFORMANCE EVALUATION AND CONTAMINANT REDUCTION (YEAR 2 SUMMARY)

The summary for Year 2 is divided into two sections. The first section is an evaluation of how the AS system performed at reducing COC concentrations in the active treatment area, and the second section summarizes end of year results of the entire PM network (wells located within the AS treatment area and monitoring wells located outside the AS treatment area).

3.6.1 AS Performance Evaluation. During Year 1, the AS system proved effective and a significant reduction in COC concentrations was observed. This led to optimizing the PM network, which included recommending wells within the active treatment area that had consecutive events with COC results below their respective GCTLs, to be removed from the Year 2 PM plan (NASA, 2022). For Year 2, the remaining monitoring wells sampled within the active treatment area had COC concentrations below GCTLs, representing a 99 percent reduction in TCE, cDCE, and VC, as shown in Tables 3-6, 3-7, and 3-8, respectively. Although COC reductions were also near 100 percent at the end of the first year of operation, it can be assumed that leaving the AS system running for an additional year after the IM objective had been met was beneficial to advancing the site closer to its overall goal of reducing COC concentrations to below GCTLs.

3.6.2 PM Network Summary. The sections below summarize end of Year 2 PM results. Concentration vs. time graphs were made for monitoring wells sampled during Year 2 with TCE, cDCE, and VC concentrations above their respective GCTLs, and are provided in Appendix D, Section 1. Additionally, Appendix D includes reduction tables for TCE, cDCE, and VC with

results from all the wells sampled during the IM in Section 2, Tables D-1 through D-3, respectively.

Shallow Zone: Of the four Shallow Zone monitoring wells sampled, MW0026S had the only detections of COCs above GCTLs by the end of Year 2 (Figure 3-9). At this well, cDCE and VC results have slightly fluctuated at concentrations greater than GCTLs since March 2022 and November 2022, respectively. Results from this well may be affected by groundwater levels and precipitation. The past four events at this well were conducted either during the wet season (October 2022 and July 2023) or dry season (March 2022 and March 2023). Results appear to give an indication that concentrations are influenced by groundwater levels as results during the dry season (with low water levels) show an increase, while during the wet season (with high water levels) they showed a decrease.

Intermediate Zone: Of the 14 Intermediate Zone monitoring wells sampled, MW0041SI and MW0043I had the only detections of COCs (TCE) above GCTLs by the end of Year 2 (Figure 3-10). TCE was detected just above the GCTL in MW0041SI at 3.6 µg/L. MW0041SI has not had a detection of TCE greater than the GCTL since baseline (4 µg/L in April 2020). In former SZ monitoring well, MW0043SI, TCE had a concentration of 10 µg/L concluding Year 2, a significant decrease from the baseline value (10,000 µg/L). At this well, concentrations of TCE have generally been consistent during the last 3 events indicating no signs of rebound.

Deep Zone: The entirety of Year 2, none of the three Deep Zone monitoring wells sampled had COC results above their respective GCTLs (Figure 3-11).

Table 3-1. Year 2 POL Southern Treatment Area and SW3 Groundwater Elevations

Monitoring Well Name	Screened Interval (feet bls)	Measurement Date	Depth to Groundwater (feet btoc)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
POL-MW0001S	3-13	6/26/2023	2.69	6.97	4.28
POL-MW0008S	5-10	10/12/2022	NM	8.58	NM
		12/21/2022	4.45	8.58	4.13
		3/8/2023	NM	8.58	NM
		6/26/2023	3.86	8.58	4.72
POL-MW0009S	7-12	6/26/2023	2.89	6.64	3.75
POL-MW00011S	10-15	10/12/2022	NM	NA	NM
		12/21/2022	5.45	NA	NA
		3/8/2023	NM	NA	NM
		6/26/2023	5.12	NA	NA
POL-MW0012S	11-16	10/12/2022	3.21	7.7	4.49
		12/21/2022	4.23	7.7	3.47
		3/8/2023	5.19	7.7	2.51
		6/26/2023	3.92	7.7	3.78
POL-MW0014S	8-13	10/12/2022	NM	NA	NM
		12/21/2022	4.61	NA	NA
		3/8/2023	NM	NA	NM
		6/26/2023	4.25	NA	NA
POL-MW0016S	8-13	10/12/2022	NM	NA	NM
		12/21/2022	5.04	NA	NA
		3/8/2023	NM	NA	NM
		6/26/2023	4.39	NA	NM
POL-MW0017S	11-16	10/12/2022	NM	7.92	NM
		12/21/2022	4.25	7.92	3.67
		3/8/2023	5.19	7.92	2.73
		6/26/2023	4.05	7.92	3.87
POL-MW0018S	8-13	10/12/2022	NM	NA	NM
		12/21/2022	4.55	NA	NA
		3/8/2023	NM	NA	NM
		6/26/2023	4.33	NA	NA
POL-MW0021S	8-13	6/26/2023	3.11	NA	NA
POL-MW0026S	5-15	10/12/2022	3.65	6.69	3.04
		12/21/2022	3.12	6.69	3.57
		3/8/2023	3.93	6.69	2.76
		6/26/2023	2.79	6.69	3.90
POL-MW0028S	7-17	10/12/2022	5.35	9.17	3.82
		12/21/2022	5.88	9.17	3.29
		3/8/2023	7.00	9.17	2.17
		6/26/2023	5.28	9.17	3.89
POL-MW0029S	5-15	6/26/2023	3.24	7.26	4.02
POL-MW0031S	5-15	10/12/2022	NM	7.19	NM
		12/21/2022	3.49	7.19	3.70
		3/8/2023	3.33	7.19	3.86
		6/26/2023	3.30	7.19	3.89
POL-MW0033S	5-15	6/26/2023	3.22	7.66	4.44
POL-MW0034S	5-15	10/12/2022	3.90	7.52	3.62
		12/21/2022	3.49	7.52	4.03
		3/8/2023	4.44	7.52	3.08
		6/26/2023	3.21	7.52	4.31

Table 3-1. Year 2 POL Southern Treatment Area and SW3 Groundwater Elevations (Continued)

Monitoring Well Name	Screened Interval (feet bls)	Measurement Date	Depth to Groundwater (feet btoc)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
POL-MW00035S	5-15	10/12/2022	NM	7.18	NM
		12/21/2022	3.60	7.18	3.58
		3/8/2023	NM	7.18	NM
		6/26/2023	2.89	7.18	4.29
POL-MW0043S	10-20	10/12/2022	NM	12.95	NM
		12/21/2022	9.68	12.95	3.27
		3/8/2023	NM	12.95	NM
		6/26/2023	9.48	12.95	3.47
POL-MW0045S	10-20	10/12/2022	NM	12.71	NM
		12/21/2022	9.50	12.71	3.21
		3/8/2023	NM	12.71	NM
		6/26/2023	9.16	12.71	3.55
POL-MW0009SI	18-23	6/26/2023	2.78	6.67	3.89
POL-MW0014SI	18-23	10/12/2022	NM	7.62	NM
		12/21/2022	4.52	7.62	3.10
		3/8/2023	5.56	7.62	2.06
		6/26/2023	4.29	7.62	3.33
POL-MW0033SI	18-23	10/12/2022	3.18	7.69	4.51
		12/21/2022	NM	7.69	NM
		3/8/2023	NM	7.69	NM
		6/26/2023	3.43	7.69	4.26
POL-MW0035SI	18-23	10/12/2022	2.76	7.25	4.49
		12/21/2022	3.91	7.25	3.34
		3/8/2023	4.87	7.25	NM
		6/26/2023	3.66	7.25	3.59
POL-MW0036SI	18-23	10/12/2022	NM	12.2	NM
		12/21/2022	9.02	12.2	3.18
		3/8/2023	NM	12.2	NM
		6/26/2023	8.77	12.2	3.43
POL-MW0041SI	18-23	10/12/2022	NM	12.06	NM
		12/21/2022	8.58	12.06	3.48
		3/8/2023	NM	12.06	NM
		6/26/2023	8.38	12.06	3.68
POL-MW0042SI	18-23	10/12/2022	NM	11.49	NM
		12/21/2022	7.95	11.49	3.54
		3/8/2023	NM	11.49	NM
		6/26/2023	7.77	11.49	3.72
POL-MW0045I	20-30	10/12/2022	NM	12.72	NM
		12/21/2022	9.66	12.72	3.06
		3/8/2023	NM	12.72	NM
		6/26/2023	9.47	12.72	3.25
POL-MW0008I	25-30	10/12/2022	NM	8.8	NM
		12/21/2022	5.22	8.8	3.58
		3/8/2023	NM	8.8	NM
		6/26/2023	4.94	8.8	3.86
POL-MW0009I	25-30	6/26/2023	2.78	6.7	3.89
POL-MW0011I	25-30	10/12/2022	NM	8.64	NM
		12/21/2022	5.5	8.64	3.14
		3/8/2023	NM	8.64	NM
		6/26/2023	5.33	8.64	3.31

Table 3-1. Year 2 POL Southern Treatment Area and SW3 Groundwater Elevations (Continued)

Monitoring Well Name	Screened Interval (feet bls)	Measurement Date	Depth to Groundwater (feet btoc)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
POL-MW00012I	28-33	10/12/2022	NM	7.65	NM
		12/21/2022	4.19	7.65	3.46
		3/8/2023	5.18	7.65	2.47
		6/26/2023	3.93	7.65	3.72
POL-MW0014I	25-30	10/12/2022	NM	7.88	NM
		12/21/2022	5.76	7.88	2.12
		3/8/2023	5.84	7.88	2.04
		6/26/2023	4.55	7.88	3.33
POL-MW0016I	25-30	10/12/2022	NM	7.82	NM
		12/21/2022	5.32	7.82	2.50
		3/8/2023	NM	7.82	NM
		6/26/2023	5.11	7.82	2.71
POL-MW0018I	25-30	10/12/2022	NM	8.56	NM
		12/21/2022	5.11	8.56	3.45
		3/8/2023	NM	8.56	NM
		6/26/2023	4.99	8.56	3.57
POL-MW0022I	25-30	10/12/2022	NM	9.25	NM
		12/21/2022	6.71	9.25	2.54
		3/8/2023	7.64	9.25	1.61
		6/26/2023	6.39	9.25	2.86
POL-MW0026I	25-30	10/12/2022	3.04	6.62	3.58
		12/21/2022	2.80	6.62	3.82
		3/8/2023	3.83	6.62	2.79
		6/26/2023	2.51	6.62	4.11
POL-MW0028I	27-32	10/12/2022	4.43	9.11	4.68
		12/21/2022	5.55	9.11	3.56
		3/8/2023	6.61	9.11	2.50
		6/26/2023	5.34	9.11	3.77
POL-MW0031I	25-30	6/26/2023	3.22	7.22	4.00
POL-MW0033I	25-30	6/26/2023	3.45	7.70	4.25
POL-MW0036I	25-30	10/12/2022	NM	12.33	NM
		12/21/2022	9.43	12.33	2.90
		3/8/2023	NM	12.33	NM
		6/26/2023	9.22	12.33	3.11
POL-MW0043I	20-30	10/12/2022	NM	12.91	NM
		12/21/2022	9.72	12.91	3.19
		3/8/2023	NM	12.91	NM
		6/26/2023	9.52	12.91	3.39
POL-MW0044I	20-30	10/12/2022	NM	12.89	NM
		12/21/2022	9.79	12.89	3.10
		3/8/2023	NM	12.89	NM
		6/26/2023	9.58	12.89	3.31
POL-MW0047I	20-30	10/12/2022	NM	10.51	NM
		12/21/2022	7.98	10.51	2.53
		3/8/2023	NM	10.51	NM
		6/26/2023	7.93	10.51	2.58
POL-MW0048I	25-35	6/26/2023	5.03	8.39	3.36
POL-MW0014ID	32-37	10/12/2022	2.47	7.63	5.16
		12/21/2022	4.50	7.63	3.13
		3/8/2023	5.51	7.63	2.12
		6/26/2023	4.28	7.63	3.35

Table 3-1. Year 2 POL Southern Treatment Area and SW3 Groundwater Elevations (Continued)

Monitoring Well Name	Screened Interval (feet bls)	Measurement Date	Depth to Groundwater (feet btoc)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
POL-MW0039ID	32-37	10/12/2022	NM	8.91	NM
		12/21/2022	5.67	8.91	3.24
		3/8/2023	NM	8.91	NM
		6/26/2023	5.74	8.91	3.17
POL-MW0016D	38-43	10/12/2022	NM	7.57	NM
		12/21/2022	5.07	7.57	2.50
		3/8/2023	NM	7.57	NM
		6/26/2023	4.93	7.57	2.64
POL-MW0018D	38-43	10/12/2022	NM	8.42	NM
		12/21/2022	5.15	8.42	3.27
		3/8/2023	NM	8.42	NM
		6/26/2023	5.01	8.42	3.41
POL-MW0022D	40-45	10/12/2022	NM	9.02	NM
		12/21/2022	6.36	9.02	2.66
		3/8/2023	7.54	9.02	1.48
		6/26/2023	6.77	9.02	2.25
POL-MW0043D	30-40	10/12/2022	NM	12.82	NM
		12/21/2022	9.62	12.82	3.20
		3/8/2023	NM	12.82	NM
		6/26/2023	9.46	12.82	3.36
POL-MW0044D	30-40	10/12/2022	NM	12.96	NM
		12/21/2022	9.70	12.96	3.26
		3/8/2023	NM	12.96	NM
		6/26/2023	9.50	12.96	3.46
POL-MW0045D	30-40	10/12/2022	NM	12.77	NM
		12/21/2022	9.71	12.77	3.06
		3/8/2023	NM	12.77	NM
		6/26/2023	9.55	12.77	3.22
POL-MW0046D	30-40	10/12/2022	NM	11.59	NM
		12/21/2022	8.65	11.59	2.94
		3/8/2023	NM	11.59	NM
		6/26/2023	8.58	11.59	3.01
POL-MW0047D	30-40	10/12/2022	NM	10.49	NM
		12/21/2022	8.02	10.49	2.47
		3/8/2023	NM	10.49	NM
		6/26/2023	7.97	10.49	2.52
POL-MW0048D	35-45	6/26/2023	4.98	8.34	3.36
POL-MW0046DD	40-50	10/12/2022	NM	11.71	NM
		12/21/2022	8.94	11.71	2.77
		3/8/2023	NM	11.71	NM
		6/26/2023	8.71	11.71	3.00
POL-MW0047DD	40-50	10/12/2022	NM	10.60	NM
		12/21/2022	8.01	10.60	2.59
		3/8/2023	NM	10.60	NM
		6/26/2023	8.02	10.60	2.58
SW3-MW0001	15-25	6/26/2023	4.86	9.08	4.22
SW3-MW0002	35-45	6/26/2023	4.96	9.19	4.23
SW3-MW0003	15-25	6/26/2023	5.43	9.5	4.07
SW3-MW0004	35-45	6/26/2023	5.50	9.58	4.08
SW3-MW0005	15-25	6/26/2023	2.84	6.68	3.84
SW3-MW0006	35-45	6/26/2023	2.82	6.68	3.86

Table 3-1. Year 2 POL Southern Treatment Area and SW3 Groundwater Elevations (Continued)

Monitoring Well Name	Screened Interval (feet bls)	Measurement Date	Depth to Groundwater (feet btoc)	Top of Casing Elevation (feet)	Groundwater Elevation (feet)
SW3-MW0009	15-25	10/12/2022	5.03	9.59	4.56
		12/21/2022	NM	9.59	NM
		3/8/2023	NM	9.59	NM
		6/26/2023	5.37	9.59	4.22
SW3-MW0010	35-45	6/26/2023	5.37	9.65	4.28
SW3-MW0011	15-25	6/26/2023	9.04	13.37	4.33
SW3-MW0012	35-45	6/26/2023	9.12	13.41	4.29
SW3-MW0013	15-25	6/26/2023	5.28	9.21	3.93
SW3-MW0014	35-45	6/26/2023	5.24	9.13	3.89
SW3-MW0015	15-25	6/26/2023	3.17	6.76	3.59
SW3-MW0016	35-45	6/26/2023	3.09	6.65	3.56
SW3-MW0017	15-25	6/26/2023	2.79	6.64	3.85
SW3-MW0018	35-45	6/26/2023	2.78	6.65	3.87
SW3-MW0019	15-25	6/26/2023	7.04	10.53	3.49
SW3-MW0020	35-45	6/26/2023	7.00	10.43	3.43
SW3-MW0021	15-25	6/26/2023	5.74	9.78	4.04
SW3-MW0022	15-25	6/26/2023	2.83	6.6	3.79
SW3-MW0023	15-25	6/26/2023	2.81	6.71	3.90
SW3-MW0024	35-45	10/12/2022	2.99	6.67	3.68
		12/21/2022	NM	6.67	NM
		3/8/2023	NM	6.67	NM
		6/26/2023	2.75	6.67	3.92
SW3-MW0025	35-45	10/12/2022	7.58	12.18	4.60
		12/21/2022	NM	12.18	NM
		3/8/2023	NM	12.18	NM
		6/26/2023	8.03	12.18	4.15
SW3-MW0026	35-45	6/26/2023	5.76	9.73	3.97
SW3-MW0027	27-37	10/12/2022	7.46	12.93	5.47
		12/21/2022	NM	12.93	NM
		3/8/2023	NM	12.93	NM
		6/26/2023	8.21	12.93	4.72
SW3-MW0028	27-37	10/12/2022	7.39	12.87	5.48
		12/21/2022	NM	12.87	NM
		3/8/2023	NM	12.87	NM
		6/26/2023	8.31	12.87	4.56
SW3-MW0029	15-25	6/26/2023	5.58	8.68	3.10
SW3-MW0030	35-45	6/26/2023	5.71	8.83	3.12
SW3-MW0031	45-50	6/26/2023	5.77	8.91	3.14
SW3-MW0032	45-50	6/26/2023	4.48	8.05	3.57
SW3-MW0033	25-35	6/26/2023	3.86	7.37	3.51
SW3-MW0034	35-45	6/26/2023	3.86	7.39	3.53
SW3-MW0035	45-50	6/26/2023	4.03	7.57	3.54

Notes:
Monitoring wells originally surveyed relative to National Geodetic Vertical Datum of 1929 were converted to North American
bls = below land surface
btoc= below top of casing
NA = not available due to lack of top of casing elevation data
NM = not measured during this sampling event

Table 3-2. Year 2 POL Southern Treatment Area Performance Monitoring Sampling Rationale

Monitoring Well Name (POL-)	Screened Interval (feet bls)	Annual	Semi-Annual	POL Sampling Rationale
MW0008I	25 to 30	-	X	Upgradient monitoring well within former HCP (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0012S*	11 to 16	-	X	Eastern upgradient monitoring well (Shallow Zone). VC > GCTL during both Year 1 semi-annual sampling events.
MW0012I	28 to 33	X	-	Eastern upgradient monitoring well (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0014SI	18 to 23	X	-	Eastern sidegradient monitoring well (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0014I	25 to 30	X	-	Eastern sidegradient monitoring well (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0014ID*	32 to 37	-	X	Eastern sidegradient monitoring well (Deep Zone). COCs < GCTL in both Year 1 semi-annual sampling events.
MW0017S	11 to 16	X	-	Northwestern sidegradient monitoring well (Shallow Zone). VC > GCTL in Sep-2021.
MW0022I	25 to 30	X	-	Eastern downgradient monitoring well (Intermediate Zone). Retained as site downgradient monitoring location. COCs < GCTL throughout Year 1.
MW0022D	40 to 45	X	-	Eastern downgradient monitoring well (Deep Zone). Retained as site downgradient monitoring location. COCs < GCTL throughout Year 1.
MW0026S*	5 to 15	-	X	Western upgradient monitoring well (Shallow Zone). cDCE > GCTL in Mar-2023 and VC > GCTL throughout Year 1.
MW0026I*	25 to 30	-	X	Western upgradient monitoring well (Intermediate Zone). VC > GCTL in Sep-2021.
MW0028S*	7 to 17	-	X	Central upgradient monitoring well (Shallow Zone). COCs < GCTL during both Year 1 semi-annual events.
MW0028I*	27 to 32	-	X	Central upgradient monitoring well (Intermediate Zone). COCs < GCTL during both Year 1 semi-annual events. Downgradient of MW0034S.
MW0035SI*	18 to 23	-	X	Northeastern sidegradient monitoring well (Intermediate Zone). COCs < GCTL during both Year 1 semi-annual events. Downgradient of MW0034S.
MW0036SI	18 to 23	-	X	Northeastern monitoring well within the former HCP (Intermediate Zone). TCE and cDCE > GCTL in Jun-2021.
MW0036I	25 to 30	-	X	Northeastern monitoring well within former HCP (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0041SI	18 to 23	-	X	Central upgradient monitoring well within the former HCP (Intermediate Zone). COCs < GCTL throughout Year 1 quarterly sampling events.
MW0042SI	18 to 23	-	X	Western sidegradient monitoring well (Intermediate Zone). TCE > GCTL throughout Year 1 quarterly sampling events. VC > GCTL in Jun-2021, Mar-2022 and Jun-2022.
MW0043I	20 to 30	-	X	Upgradient former SZ monitoring well (Intermediate Zone). TCE > GCTL throughout Year 1 quarterly sampling events.
MW0044D	30 to 40	-	X	Central former HCP monitoring well (Deep Zone). VC > GTCL in Mar-2022.
MW0045I	20 to 30	-	X	Downgradient former SZ monitoring well (Intermediate Zone). TCE > GCTL in Jun-2021.

Notes:

* Additional sampling in July 2023 to align sampling months with remaining semi-annual monitoring wells.

Year 1 operational period = Jan-2021 to Aug-2022

SZ = Source zone (area defined by trichloroethene (TCE) concentrations exceeding 11,000 µg/L)

HCP = High concentration plume (area where concentrations are greater than Natural Attenuation Default Concentrations)

> = COC result exceeded the GCTL

< = COC result was less than the GCTL

bls = below land surface

COC = Contaminant of concern

GCTL = State of Florida Groundwater Cleanup Target Levels

POL = Paint and Oil Locker

TCE = trichloroethene

cDCE = cis-1,2-Dichloroethene

VC = Vinyl chloride

Table 3-3. POL Southern Treatment Area Year 2 Field Measurements

Well ID (POL-)	Sample Date	pH (S.U.)	Temp. (°C)	Cond. (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
MW0008I	12/22/2022	5.86	24.20	1,998.0	0.33	18.10	1.6
	7/6/2023	6.53	27.80	2,994.0	0.41	8.19	-37.5
MW0012S	10/12/2022	5.42	28.17	607.4	0.03	8.35	13.5
	3/9/2023	5.42	25.50	164.9	0.24	16.90	-75.0
	7/6/2023	4.89	28.20	102.7	0.13	11.07	119.3
MW0012I	3/9/2023	7.04	25.50	644.0	0.14	2.13	-128.8
MW0014SI	3/9/2023	3.91	25.30	1,006.0	0.09	2.21	317.4
MW0014I	3/9/2023	7.11	25.00	2,402.0	0.28	2.34	-99.4
MW0014ID	10/12/2022	6.39	26.30	1,147.3	0.01	3.12	-19.1
	3/9/2023	6.99	24.90	1,006.0	0.14	7.08	-113.1
	7/7/2023	6.32	25.90	766.0	0.18	5.30	-75.7
MW0017S	3/9/2023	6.91	25.10	690.0	0.14	7.94	-105.6
MW0022I	3/9/2023	7.33	23.30	1,368.0	0.05	1.33	-118.4
MW0022D	3/9/2023	7.31	23.60	3,460.0	0.15	4.19	-102.3
MW0026S	10/13/2022	4.56	30.19	874.9	0.49	36.12	126.5
	3/9/2023	5.63	28.10	691.0	0.43	NC	46.2
	7/6/2023	5.18	32.70	556.0	0.53	NC	101.2
MW0026I	10/13/2022	6.51	28.53	1,036.8	0.03	10.26	-82.8
	3/9/2023	7.06	27.30	902.0	0.04	10.33	-120.7
	7/6/2023	6.76	30.00	715.0	0.13	7.66	-78.0
MW0028S	10/13/2022	3.25	32.16	3,218.4	2.98	26.68	262.3
	3/9/2023	3.83	24.10	2,287.0	1.14	8.02	63.4
	7/6/2023	4.47	29.10	224.8	0.35	8.65	224.8
MW0028I	10/13/2022	6.41	27.82	1,282.0	0.05	0.98	-60.6
	3/10/2023	6.81	25.10	1,409.0	0.14	4.18	-102.0
	7/6/2023	6.42	27.60	1,114.0	0.19	14.60	-51.0
MW0035SI	10/12/2022	4.74	25.93	143.4	0.04	7.17	44.7
	3/9/2023	5.51	24.40	1,298.0	0.09	2.19	-113.8
	7/6/2023	5.12	26.00	112.8	0.16	6.00	67.4
MW0036SI	12/22/2022	3.66	25.00	2,695.0	0.12	3.44	326.1
	7/5/2023	3.37	27.70	3,911.0	0.11	4.74	248.8
MW0036I	12/22/2022	5.92	26.40	3,387.0	0.05	2.23	-74.5
	7/6/2023	5.63	27.80	4,727.0	0.10	4.55	-60.1
MW0041SI	12/22/2022	3.64	25.30	3,195.0	0.11	2.41	3.1
	7/5/2023	3.31	28.00	3,431.0	0.09	6.59	237.3
MW0042SI	12/21/2022	3.66	25.60	947.0	0.15	0.20	24.3
	7/5/2023	3.28	27.20	1,259.0	0.07	6.51	31.5
MW0043I	12/22/2022	3.29	24.40	2,443.0	1.35	2.03	406.9
	7/5/2023	3.10	28.20	2,732.0	0.41	8.41	416.1
MW0044D	12/22/2022	6.42	25.90	2,664.0	0.14	4.44	-39.0
	7/7/2023	6.00	28.20	2,641.0	0.16	6.44	-44.2
MW0045I	12/22/2022	3.63	26.50	2,450.0	3.62	0.00	368.0
	7/7/2023	3.31	29.00	2,427.0	1.85	5.48	173.0

Notes:

Values shown are final stabilization readings recorded before collecting sample

Values have been rounded from the source material field notes as follows: pH, temperature, turbidity and dissolved oxygen are shown to two decimals places, while conductivity and ORP are shown to one decimal place

Well MS0026S was purged dry on 3/9/2023 and 7/6/2023. Following FDEP guidelines, field parameters were disregarded for calculations, as turbidity was overrange

POL = Paint and Oil Locker
Temp. = Temperature
°C = degrees Celsius
Cond. = Conductivity
µS/cm= microSiemens per centimeter
DO = Dissolved oxygen
mg/L = milligrams per liter
S.U. = Standard Units
mV = millivolts
NTU = Nephelometric turbidity units
NC = Not collected
ORP = Oxidation/reduction potential

Table 3-4. Contaminants of Concern Performance Monitoring Analytical Results

Sample Location (POL-)	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
MW0008I	**25 to 30**	Apr-20	0.89 U	0.53 U	0.73 U	**0.93 I**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	**1.2 J**	**0.83 J**	0.73 U	0.71 U
		Mar-22	**1.9 I**	**1 I**	0.73 U	0.71 U
		Jun-22	0.89 U	**1.6 I**	0.73 U	0.71 U
		Dec-22	0.89 U	**2.4**	0.73 U	0.71 U
		Jul-23	0.20 U	0.25 U	0.34 U	0.40 UJ3
MW0008S	5 to 10	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0011I	25 to 30	Apr-20	**130**	**600**	**140**	**130**
		Aug-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	**1.3 I**	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0011S	10 to 15	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Aug-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0012I	**28 to 33**	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	**0.76 I**
		Mar-23	0.15 U	**0.34 I**	0.50 U	**0.52 I**
MW0012S	**11 to 16**	Sep-21	**3.4**	**54**	**3.1**	**6.9**
		Mar-22	**1.3 I**	**35**	**2.0 I**	**9.9**
		Oct-22	**2.0**	**28**	**2.4**	**17**
		Mar-23	**0.36 I**	**2.0**	0.50 U	0.50 U
		Jul-23	**0.27 I**	**0.88 I**	0.34 U	0.4 UJ3
MW0014I	**25 to 30**	Sep-21	0.89 U	**0.55 I**	0.73 U	0.71 U
		Mar-22	0.89 U	**0.64 J**	0.73 U	0.71 U
		Mar-23	0.15 U	**0.21 I**	0.50 U	0.50 U
MW0014ID	**32 to 37**	Sep-21	0.89 U	**0.54 I**	0.73 U	0.71 U
		Mar-22	0.89 U	**0.93 I**	0.73 U	0.71 U
		Oct-22	0.50 U	**0.57 I**	0.50 U	0.50 U
		Mar-23	0.15 U	**0.36 I**	0.50 U	0.50 U
		Jul-23	0.79 U	0.71 U	0.95 U	0.64 U
MW0014S	**8 to 13**	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0014SI	**18 to 23**	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	**0.9 I**	0.73 U	0.71 U
		Mar-23	0.15 U	**0.69 I**	0.50 U	0.50 U
MW0016D	38 to 43	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0016I	25 to 30	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0016S	8 to 13	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0017S	**11 to 16**	Sep-21	0.89 U	0.53 U	0.73 U	**2.7**
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-23	0.15 U	0.20 U	0.50 U	0.50 U
MW0018D	38 to 43	Apr-20	**40**	**96**	**4.3**	**9.8**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0018I	25 to 30	Apr-20	0.89 U	**1.4 I**	0.73 U	**1.4 I**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U

Table 3-4. Contaminants of Concern Performance Monitoring Analytical Results (Continued)

Sample Location (POL-)	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
MW0018S	8 to 13	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-21	**1.2 J**	**0.63 J**	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0022D	**40 to 45**	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-23	0.15 U	0.20 U	0.50 U	0.50 U
MW0022I	**25 to 30**	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-23	0.15 U	0.20 U	0.50 U	0.50 U
MW0026I	**25 to 30**	Sep-21	0.89 U	**2 I**	0.73 U	**2.1 I**
		Mar-22	0.89 U	**1.8 I**	0.73 U	**0.84 I**
		Oct-22	0.50 U	**2.2**	0.50 U	0.50 U
		Mar-23	0.15 U	**2.1**	0.50 U	**0.56 I**
		Jul-23	0.20 U	**1.8**	0.34 U	0.40 U
MW0026S	**5 to 15**	Nov-20	**3.3**	**46**	**2.6**	**6.4**
		Sep-21	**2.5**	**66**	**2.8**	**9.8**
		Mar-22	**2.3 I**	**140**	**8.4**	**18**
		Oct-22	2.5 UQ	**100 Q**	**6.1 Q**	**11 Q**
		Mar-23	**1.3 I**	**110**	**5.5**	**14**
		Jul-23	**1.1**	**100**	**3.5**	**8.3**
MW0028I	**27 to 32**	Sep-21	0.89 U	0.53 U	0.73 U	**1.2 I**
		Mar-22	0.89 U	0.53 U	0.73 U	**1.4 I**
		Oct-22	0.50 U	**0.71 I**	0.50 U	0.50 U
		Mar-23	0.15 U	**0.32 I**	0.50 U	**0.64 I**
		Jul-23	0.20 U	**0.71 I**	0.34 U	0.40 U
MW0028S	**7 to 17**	Sep-21	**1.3 I**	0.53 U	0.73 U	0.71 U
		Mar-22	**0.91 I**	**0.94 I**	0.73 U	0.71 U
		Oct-22	**1.1**	**0.93 I**	0.50 U	0.50 U
		Mar-23	**0.27 I**	**0.33 I**	0.50 U	0.50 U
		Jul-23	0.20 U	0.25 U	0.34 U	0.40 UJ3
MW0035S	5 to 15	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0035SI	**18 to 23**	Sep-21	0.89 U	**1.8 I**	0.73 U	0.71 U
		Mar-22	0.89 U	**2.3 I**	0.73 U	0.71 U
		Oct-22	0.50 U	**1.9**	0.50 U	0.50 U
		Mar-23	0.15 U	**1.7**	0.50 U	0.50 U
		Jul-23	0.20 U	**0.94 I**	0.34 U	0.40 UJ3
MW0036I	**25 to 30**	Apr-20	0.89 U	**1 I**	**0.79 I**	**5.6**
		Jun-21	**1.7 J**	**2.8**	0.73 U	0.71 U
		Sep-21	**2.1 I**	**20**	**0.83 I**	0.71 U
		Dec-21	**2 J**	**7**	0.73 U	0.71 U
		Mar-22	**1.5 I**	**1.3 I**	0.73 U	0.71 U
		Jun-22	**3.3**	**4.5**	0.73 U	0.71 U
		Dec-22	**2.4**	**2.7**	0.73 U	0.71 U
		Jul-23	**1.7**	**1.4**	0.34 U	0.40 UJ3
MW0036SI	**18 to 23**	Apr-20	**190**	**400**	**17**	**51**
		Jun-21	**9.3 J**	**270**	**7.9 J**	3.6 U
		Sep-21	**2 I**	**4**	0.73 U	0.71 U
		Dec-21	**2.1 J**	**0.85 J**	0.73 U	0.71 U
		Mar-22	**1.8 I**	0.53 U	0.73 U	0.71 U
		Jun-22	**2.1 I**	0.53 U	0.73 U	0.71 U
		Dec-22	**3.1**	0.53 U	0.73 U	0.71 U
		Jul-23	**1.9**	0.25 U	0.34 U	0.40 UJ3
MW0039ID	32 to 37	Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0041SI	**18 to 23**	Apr-20	**4 I**	**410**	**5.4**	**86**
		Jun-21	**1.7 J**	**2.5**	0.73 U	0.71 U
		Sep-21	0.89 U	**0.55 I**	0.73 U	0.71 U
		Dec-21	**1.7 J**	0.53 U	0.73 U	0.71 U
		Mar-22	**1.1 I**	**0.71 I**	0.73 U	0.71 U
		Jun-22	**2.2 I**	**0.85 I**	0.73 U	0.71 U
		Dec-22	**2.5**	**4.8**	0.73 U	0.71 U
		Jul-23	**3.6**	**6.6**	**1.1**	0.40 UJ3

Table 3-4. Contaminants of Concern Performance Monitoring Analytical Results (Continued)

Sample Location (POL-)	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
MW0042SI	**18 to 23**	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-21	**14**	**44**	**4.6**	**3.7**
		Sep-21	**5.7**	**49**	**3.9**	0.71 U
		Dec-21	**6.2**	**33**	**3.2**	0.71 U
		Mar-22	**6.2**	**19**	**1.6 I**	**1.6 I**
		Jun-22	**10**	**23**	**2 I**	**2.2 I**
		Dec-22	**9.9**	**37**	**1.9**	0.71 U
		Jul-23	**3.3**	**7.2**	**0.64 I**	0.40 UJ3
MW0043D	30 to 40	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-21	0.89 U	**2 J**	0.73 U	0.71 U
		Sep-21	0.89 U	**1.6 I**	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0043I	**20 to 30**	Apr-20	**10,000**	**1,500**	**280**	**98 I**
		Jun-21	**71**	**65**	**4.5**	**0.82 J**
		Sep-21	**27**	**1.9 I**	0.73 U	0.71 U
		Dec-21	**35**	**2.4 J**	**0.8 J**	0.71 U
		Mar-22	**41**	**3.5**	**0.75 I**	0.71 U
		Jun-22	**6.2**	**0.93 I**	0.73 U	0.71 U
		Dec-22	**3.7**	0.53 U	0.73 U	0.71 U
		Jul-23	**10**	**0.92 I**	0.34 U	0.40 UJ3
MW0043S	10 to 20	Apr-20	**15**	**8.6**	0.73 U	0.71 U
		Jun-21	**2.8**	**8**	**1.2 J**	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0044D	**30 to 40**	Apr-20	0.89 U	**3.6**	0.73 U	**4.6**
		Jun-21	0.89 U	**1.6 J**	0.73 U	0.71 U
		Sep-21	0.89 U	**2 I**	0.73 U	0.71 U
		Dec-21	0.89 U	**1.4 J**	0.73 U	0.71 U
		Mar-22	0.89 U	**1.8 I**	0.73 U	**1.5 I**
		Jun-22	0.89 U	**1.3 I**	0.73 U	**1.2 I**
		Dec-22	**1.0**	**0.64 I**	0.73 U	0.71 U
		Jul-23	**1.5 I**	**1.4**	0.95 U	**1.1 I**
MW0044I	20 to 30	Apr-20	**16**	**28**	0.73 U	**3.4**
		Jun-21	0.89 U	**0.53 J**	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0045D	30 to 40	Apr-20	0.89 U	0.53 U	0.73 U	**2.9**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0045I	**20 to 30**	Apr-20	**2,400**	**830**	**400**	**300**
		Jun-21	**17**	**2.1 J**	**1.2 J**	0.71 U
		Sep-21	**2.1 I**	0.53 U	0.73 U	0.71 U
		Dec-21	**1.1 J**	**0.74 J**	0.73 U	0.71 U
		Mar-22	**1.6 I**	0.53 U	0.73 U	0.71 U
		Jun-22	**1.2 I**	0.53 U	0.73 U	0.71 U
		Dec-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jul-23	**1.3 I**	0.71 U	0.95 U	0.64 U
MW0045S	10 to 20	Apr-20	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-21	**3.4**	**1.4 J**	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0046D	30 to 40	Apr-20	0.89 U	**15**	**8.4**	**32**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U

Table 3-4. Contaminants of Concern Performance Monitoring Analytical Results (Continued)

Sample Location (POL-)	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
MW0046DD	40 to 50	Apr-20	0.89 U	0.53 U	**6.1**	**0.96 I**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0047D	30 to 40	Apr-20	0.89 U	**0.75 I**	**11**	**50**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0047DD	40 to 50	Apr-20	0.89 U	0.53 U	**1.2 I**	**1.2 I**
		Jun-21	0.89 U	0.53 U	0.73 U	0.71 U
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U
MW0047I	20 to 30	Apr-20	4.4 U	2.6 U	**33**	**360**
		Jun-21	0.89 U	0.53 U	0.73 U	**1.4 J**
		Sep-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-21	0.89 U	0.53 U	0.73 U	0.71 U
		Mar-22	0.89 U	0.53 U	0.73 U	0.71 U
		Jun-22	0.89 U	0.53 U	0.73 U	0.71 U

Notes:
Bold sample location and screen interval indicate well was sampled during the reporting period
Concentrations in µg/L
Shading indicates State of Florida Groundwater Cleanup Target Level (GCTL) exceedance, TCE = 3 µg/L, cDCE = 70 µg/L, tDCE = 100 µg/L, VC = 1 µg/L
Bolding indicates a concentration is greater than the method detection limit
bls = below land surface
TCE = Trichloroethene
cDCE = cis-1,2-dichloroethene
tDCE = trans-1,2-dichloroethene
VC = Vinyl chloride
U = Value was reported as below the method detection limit, therefore the detection limit is shown
I = Value is between method detection limit and practical quantitation limit
J = The result was an estimated value with an unknown bias
J3= Laboratory estimated value, may not be accurate
Q= Sample analyzed beyond hold time; reported results are considered minimum values

Table 3-5. Air Sample Analytical Results

LOCATION ID (POL-)	SAMPLE ID	SAMPLE DATE	TCE ($\mu g/m^3$)	cDCE ($\mu g/m^3$)	tDCE ($\mu g/m^3$)	VC ($\mu g/m^3$)
AMB5	POL-AMB5-20210125	1/25/2021	2.47 U	1.98 U	1.67 U	1.89 U
	POL-AMB5-20220124	1/24/2022	2.5 U	2.0 U	1.7 U	1.9 U
	POL-AMB5-20230109	1/9/2023	0.97 U	0.79 U	0.79 U	0.31 U
AMB6	POL-AMB6-20210125	1/25/2021	2.58 U	2.06 U	1.74 U	1.94 U
	POL-AMB6-20220124	1/24/2022	2.5 U	2.0 U	1.7 U	1.9 U
	POL-AMB6-20230109	1/9/2023	0.97 U	0.79 U	0.79 U	0.31 U
AMB7	POL-AMB7-20210125	1/25/2021	2.58 U	2.06 U	1.74 U	1.97 U
	POL-AMB7-20220124	1/24/2022	2.6 U	2.0 U	1.7 U	1.9 U
	POL-AMB7-20230109	1/9/2023	0.97 U	0.79 U	0.79 U	0.31 U
AMB8	POL-AMB8-20210125	1/25/2021	2.63 U	2.10 U	1.78 U	1.99 U
	POL-AMB8-20220124	1/24/2022	2.5 U	2.0 U	1.7 U	1.9 U
	POL-AMB8-20230109	1/9/2023	0.97 U	0.79 U	0.79 U	0.31 U
AMB9	POL-AMB9-20210125	1/25/2021	2.69 U	2.18 U	1.82 U	2.07 U
	POL-AMB9-20220124	1/24/2022	2.4 U	2.0 U	1.6 U	1.9 U
	POL-AMB9-20230109	1/9/2023	0.97 U	0.79 U	0.79 U	0.31 U
OSHA PEL			540,000	790,000	NV	NV
ACGIH TLV			54,000	793,000	NV	2,600

Notes:

$\mu g/m^3$ = micrograms per cubic meter

U = Value was reported as below the method detection limit, therefore the detection limit is shown

cDCE = cis-1,2-Dichloroethene

TCE = Trichloroethene

tDCE = trans-1,2-Dichloroethene

VC = Vinyl chloride

OSHA PEL refers to the Occupational Safety and Health Administration Permissable Exposure Limits

ACGIH TLV-TWA refers to the American Conference of Governmental Industrial Hygienists Threshold Limit Values

NV = No value available

Table 3-6. Groundwater TCE Concentration Reduction

Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Performance Monitoring Event				
		April-20	June-22		July-23		
		TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction from Baseline	Concentration Reduction from June-22
MW0043I	20-30	**10,000**	**6.2**	99.94%	**10**	99.80%	99.90%
MW0045I	20-30	**2,400**	1.2 I	99.95%	1.3 I	99.89%	99.89%
Source Well Geometric Mean	--	**4,899**	2.73	99.94%	3.61	99.93%	-118.45%

Notes:

For results that were below the laboratory method detection limit, 1/2 the detection limit was used for calculations

Shading indicates concentrations exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for TCE, 300 µg/L

Bolding indicates concentrations exceed State of Florida Groundwater Cleanup Target Level for TCE, 3 µg/L

June-22 was the last sampling event during Year 1 operation; July-23 was the last sampling event for Year 2 reporting period

Wells used for performance evaluation were within the radius of influence of the air sparge network during Year 2 operation

POL = Paint and Oil Locker

TCE = Trichloroethene

µg/L = micrograms per liter

bls = below land surface

U = Below laboratory method detection limit

I = Value is between method detection limit and practical quantitation limit

Table 3-7. Groundwater cDCE Concentration Reduction

Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Performance Monitoring Event				
		April-20	June-22		July-23		
		cDCE (µg/L)	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction from Baseline	Concentration Reduction from June-22
MW0043I	20-30	**1,500**	0.93 I	99.94%	0.92 I	99.94%	1.08%
MW0045I	20-30	**830**	0.53 U	99.97%	0.71 U	99.96%	-33.96%
Source Well Geometric Mean	--	**1,116**	0.35	99.97%	0.57	99.95%	-62.80%

Notes:

For results that were below the laboratory method detection limit, 1/2 the detection limit was used for calculations

Shading indicates concentrations exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for cDCE, 700 µg/L

Bolding indicates concentrations exceed State of Florida Groundwater Cleanup Target Level for cDCE, 70 µg/L

June-22 was the last sampling event during Year 1 operation; July-23 was the last sampling event for Year 2 reporting period

Wells used for performance evaluation were within the radius of influence of the air sparge network during Year 2 operation

POL = Paint and Oil Locker

cDCE = cis-1,2-Dichloroethene

µg/L = micrograms per liter

bls = below land surface

U = Below laboratory method detection limit

I = Value is between method detection limit and practical quantitation limit

Table 3-8. Groundwater VC Concentration Reduction

Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Perfomance Monitoring Event				
		April-20	June-22		July-23		
		VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction from Baseline	Concentration Reduction from June-22
MW0043I	20-30	**98 I**	0.71 U	99.64%	0.40 UJ3	99.80%	43.66%
MW0045I	20-30	**300**	0.71 U	99.88%	0.64 U	99.89%	9.86%
Source Well Geometric Mean	--	**171**	0.71	99.59%	0.31	99.91%	56.93%

Notes:

For results that were below the laboratory method detection limit, 1/2 the detection limit was used for calculations

Shading indicates concentrations exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for VC, 100 µg/L

Bolding indicates concentrations exceed State of Florida Groundwater Cleanup Target Level for VC, 1 µg/L

June-22 was the last sampling event during Year 1 operation; July-23 was the last sampling event for Year 2 reporting period

Wells used for performance evaluation were within the radius of influence of the air sparge network during Year 2 operation

POL = Paint and Oil Locker

VC = Vinyl Chloride

µg/L = micrograms per liter

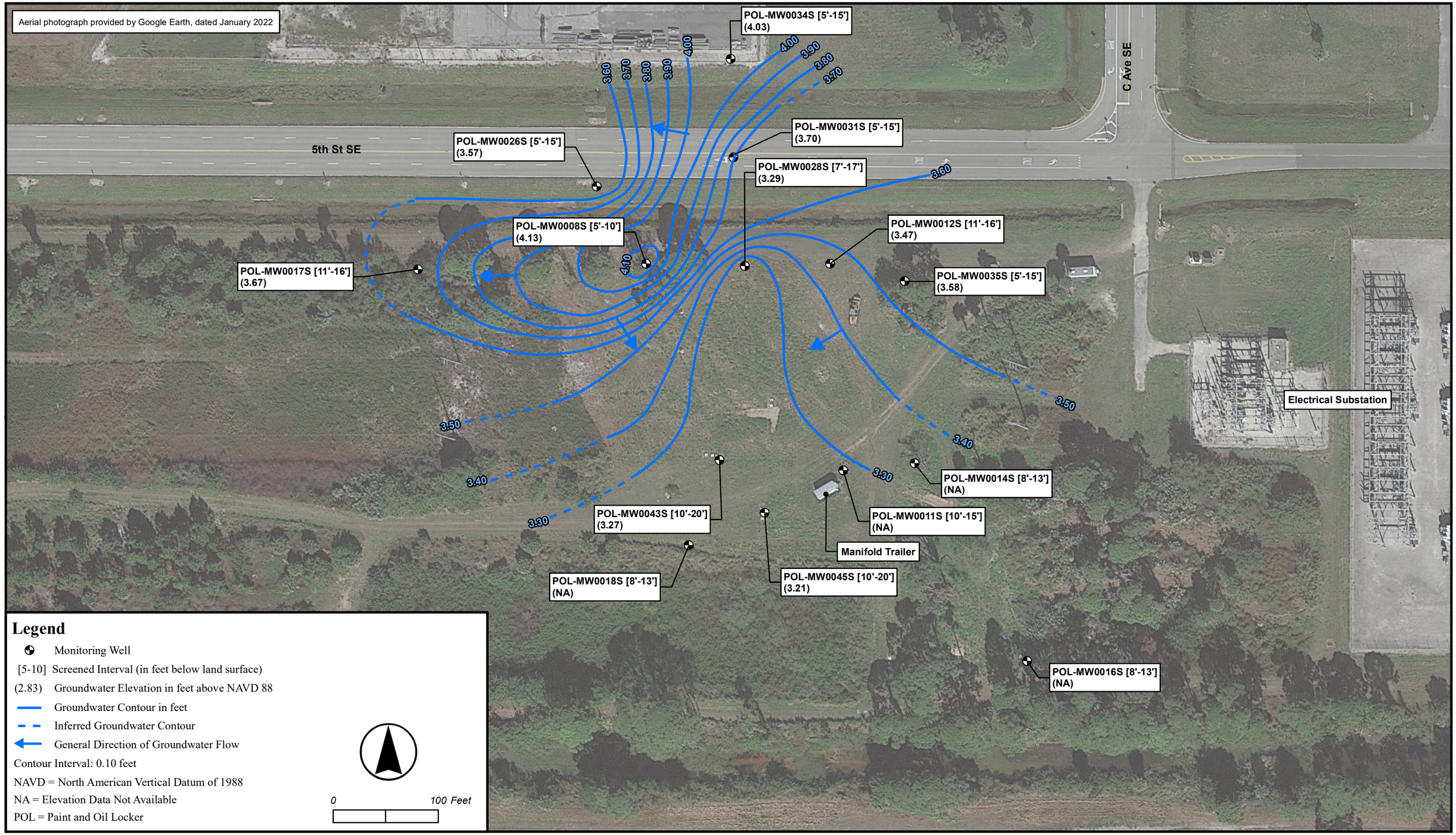
bls = below land surface

U = Below laboratory method detection limit

I = Value is between method detection limit and practical quantitation limit

J3 = Estimated Value

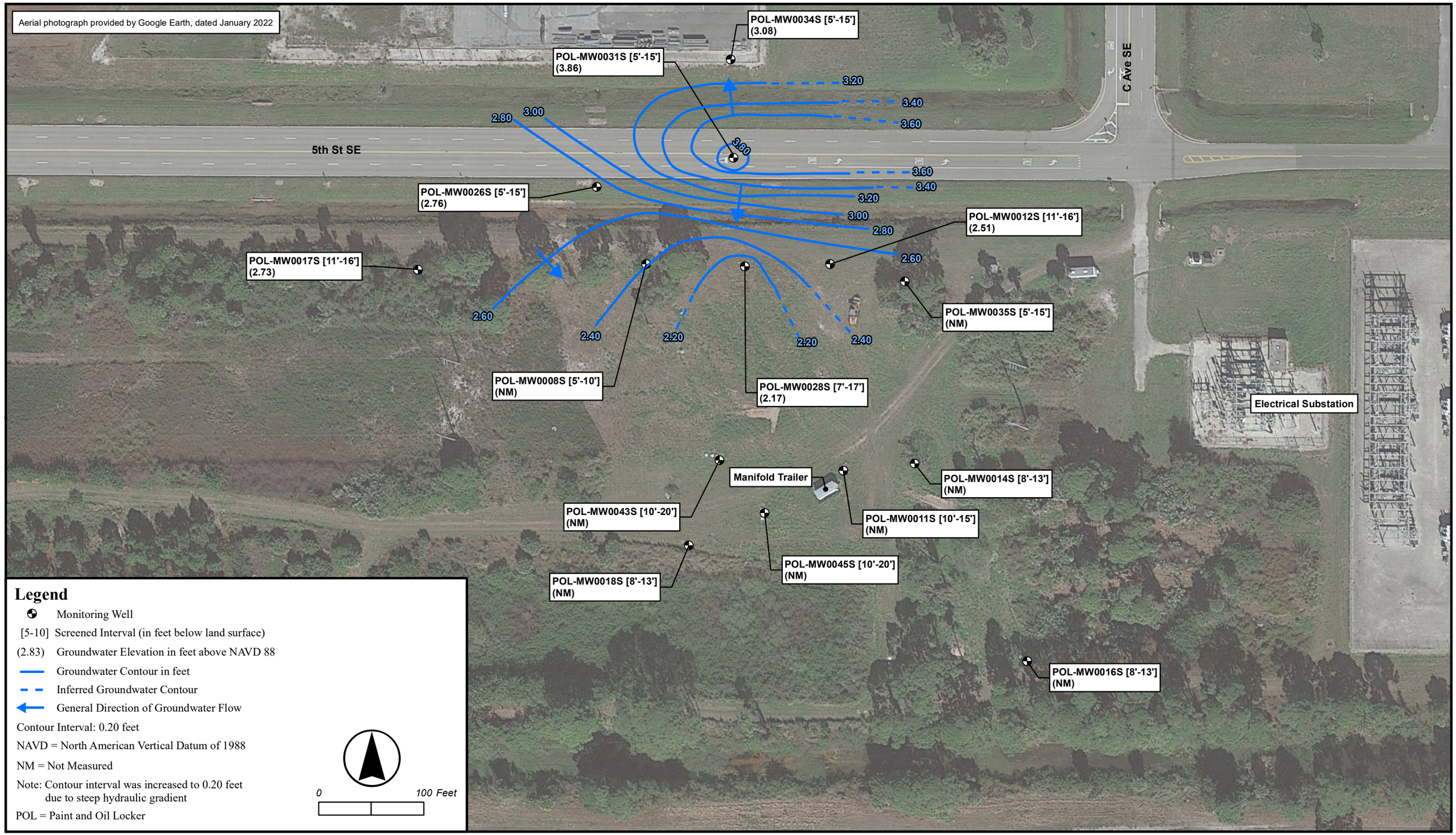
FIGURE 3-1 SHALLOW GROUNDWATER CONTOUR MAP - DECEMBER 2022
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



JAX C:\GIS\KSC\MXD\POL\3-1_POL_DEC2022_SHALLOW_CONTOURS.MXD 12/25/23

FIGURE 3-2 SHALLOW GROUNDWATER CONTOUR MAP - MARCH 2023
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA

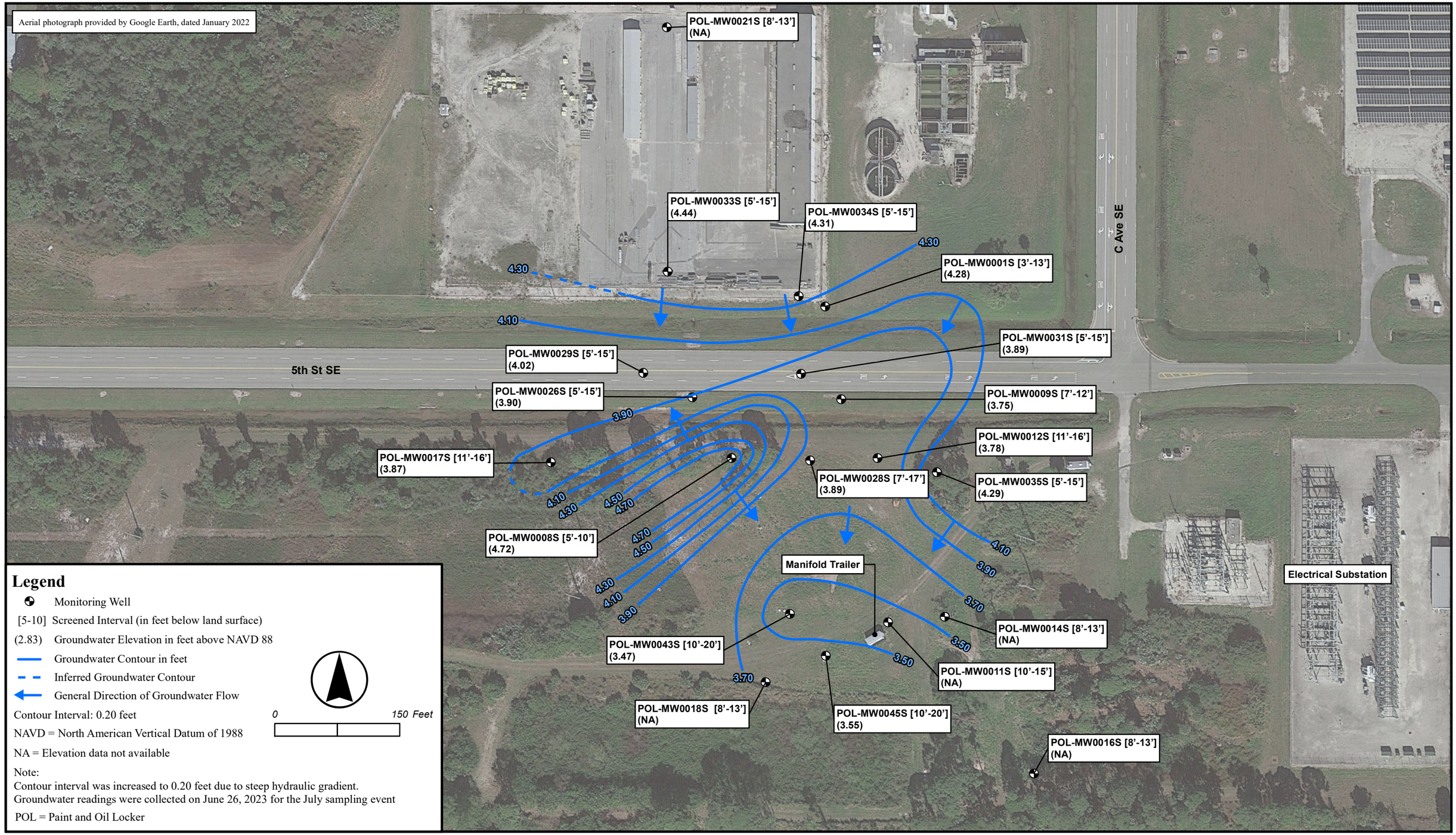
POL-SW3 LTM-PMR
Revision: 0
January 2024



JAX C:\GIS\KSC\MXD\POL\3-2_POL_MAR2023_SHALLOW_CONTOURS.MXD 12/25/23

FIGURE 3-3 SHALLOW GROUNDWATER CONTOUR MAP - JUNE 2023
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA

POL-SW3 LTM-PMR
Revision: 0
January 2024



Legend

- Monitoring Well
- [5-10] Screened Interval (in feet below land surface)
- (2.83) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

Contour Interval: 0.20 feet

0 150 Feet

NAVD = North American Vertical Datum of 1988

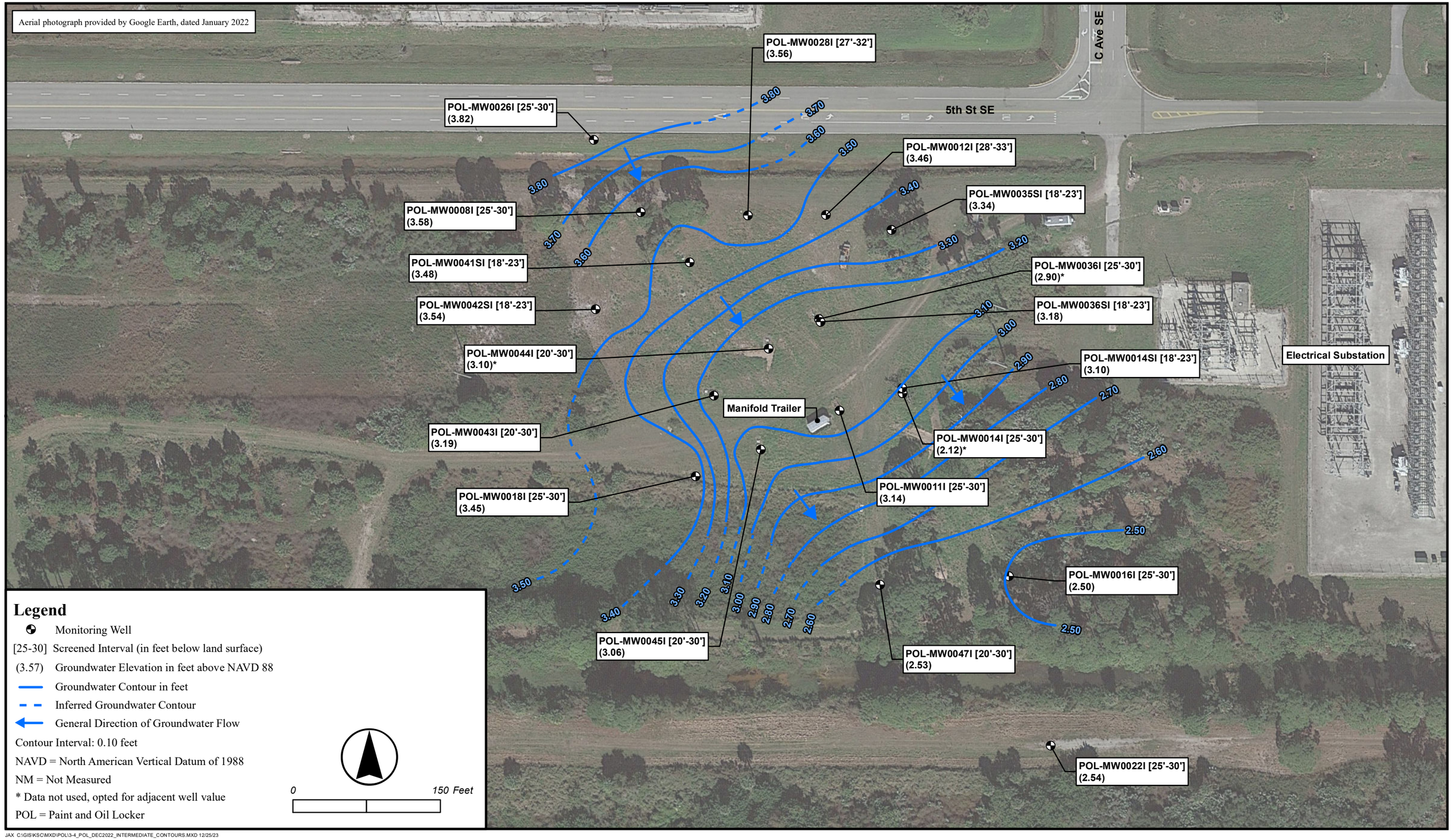
NA = Elevation data not available

Note:
Contour interval was increased to 0.20 feet due to steep hydraulic gradient.
Groundwater readings were collected on June 26, 2023 for the July sampling event

POL = Paint and Oil Locker

JAX C:\GIS\KSC\MXD\POL\3-3_POL_JUNE2023_SHALLOW_CONTOURS.MXD 12/25/23

FIGURE 3-4 INTERMEDIATE GROUNDWATER CONTOUR MAP - DECEMBER 2022
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



Legend

- Monitoring Well
- [25-30] Screened Interval (in feet below land surface)
- (3.57) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

Contour Interval: 0.10 feet

NAVD = North American Vertical Datum of 1988

NM = Not Measured

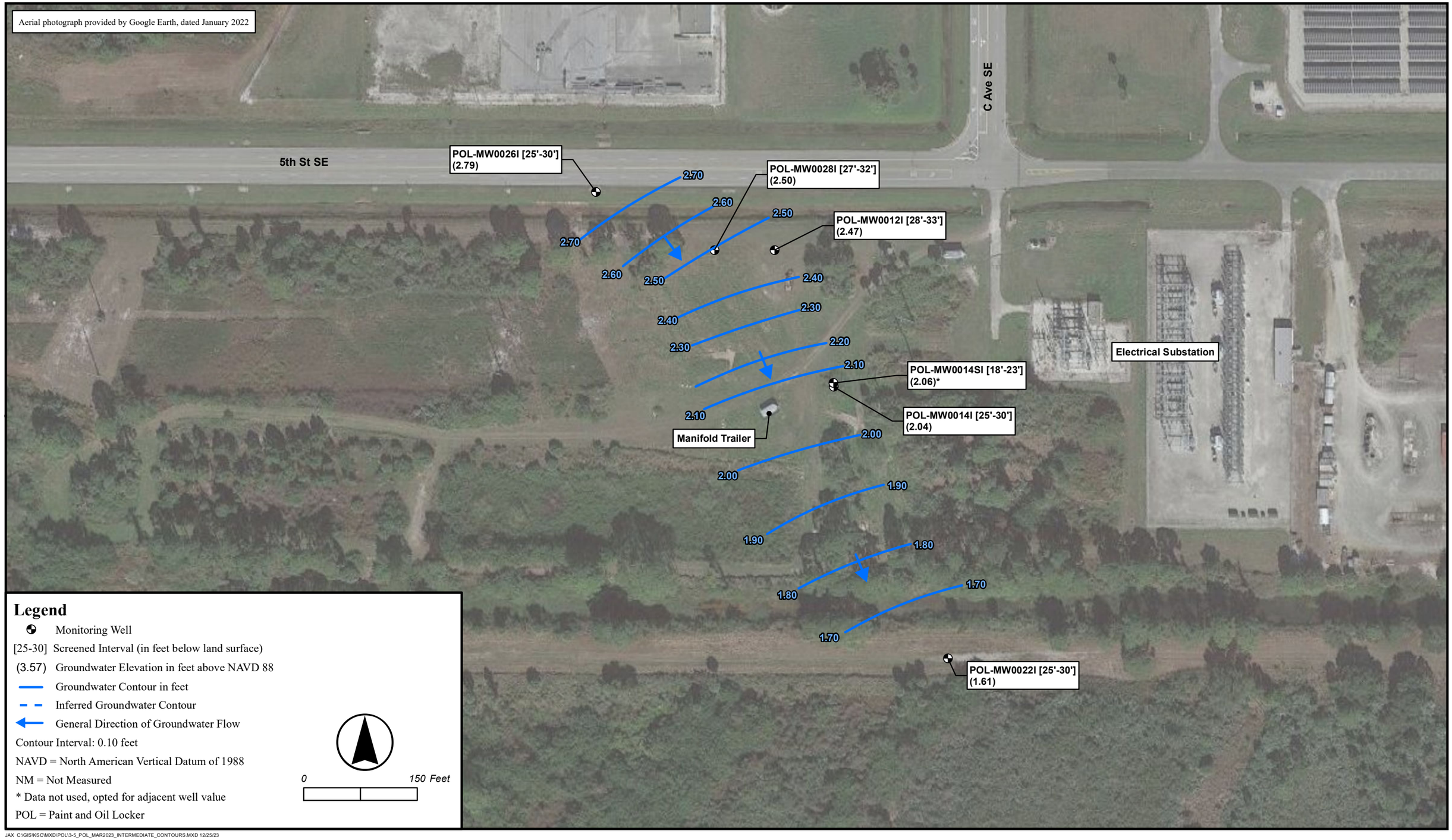
* Data not used, opted for adjacent well value

POL = Paint and Oil Locker

0 150 Feet

JAX C:\GIS\KSC\MXD\POL\3-4_POL_DEC2022_INTERMEDIATE_CONTOURS.MXD 12/25/23

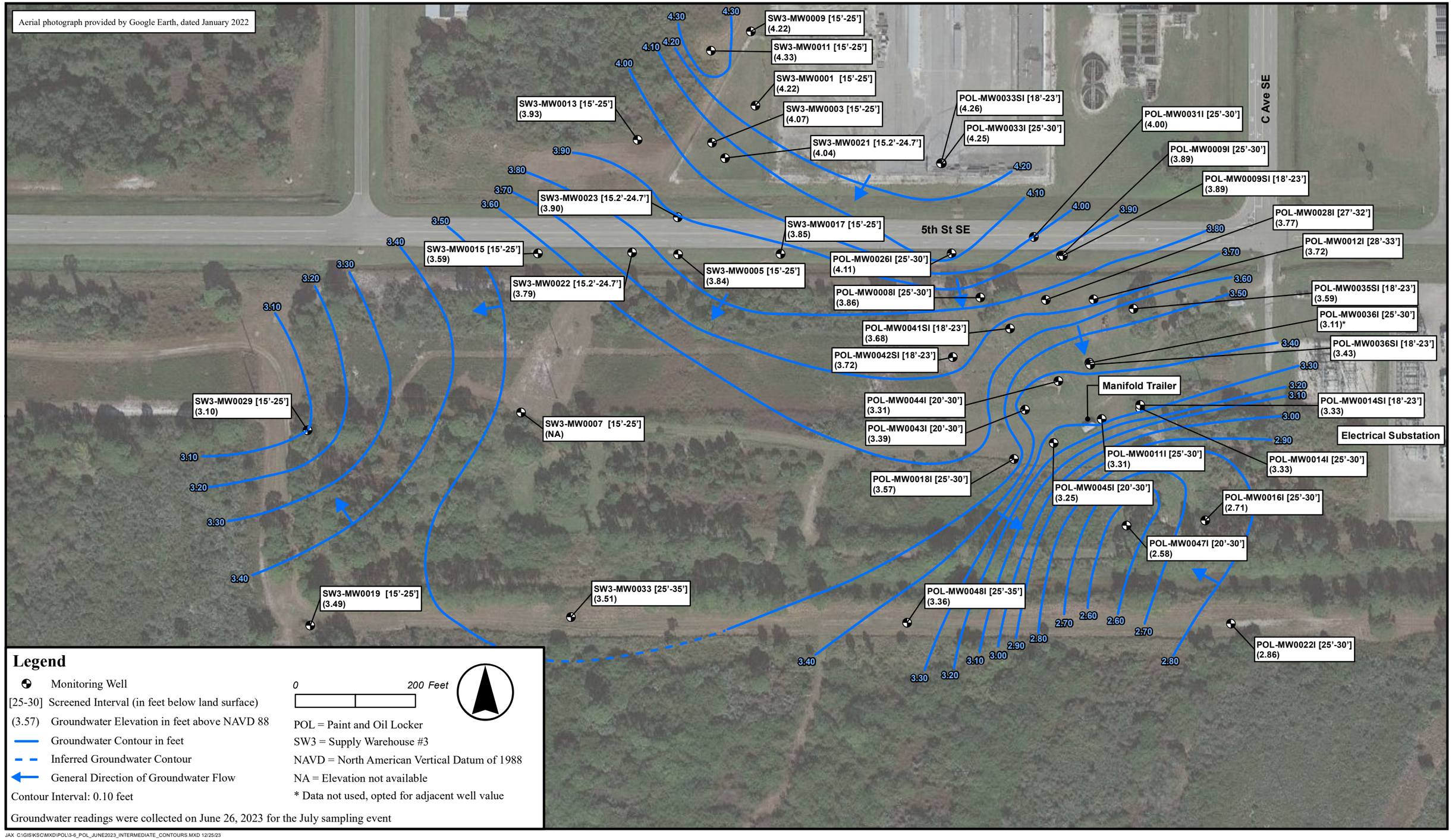
FIGURE 3-5 INTERMEDIATE GROUNDWATER CONTOUR MAP - MARCH 2023
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



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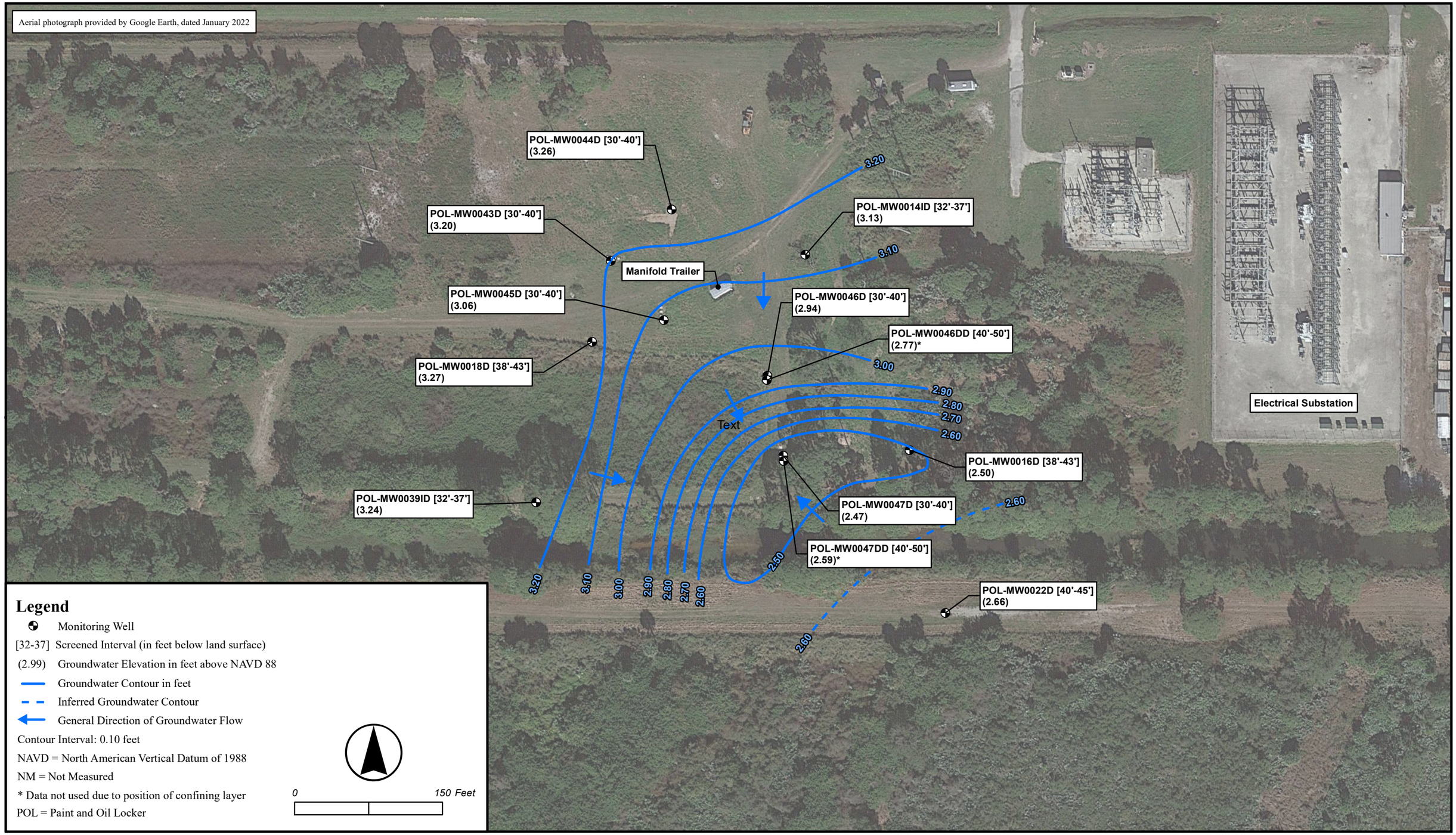
FIGURE 3-6 INTERMEDIATE GROUNDWATER CONTOUR MAP - JUNE 2023
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA

POL-SW3 LTM-PMR
Revision: 0
January 2024



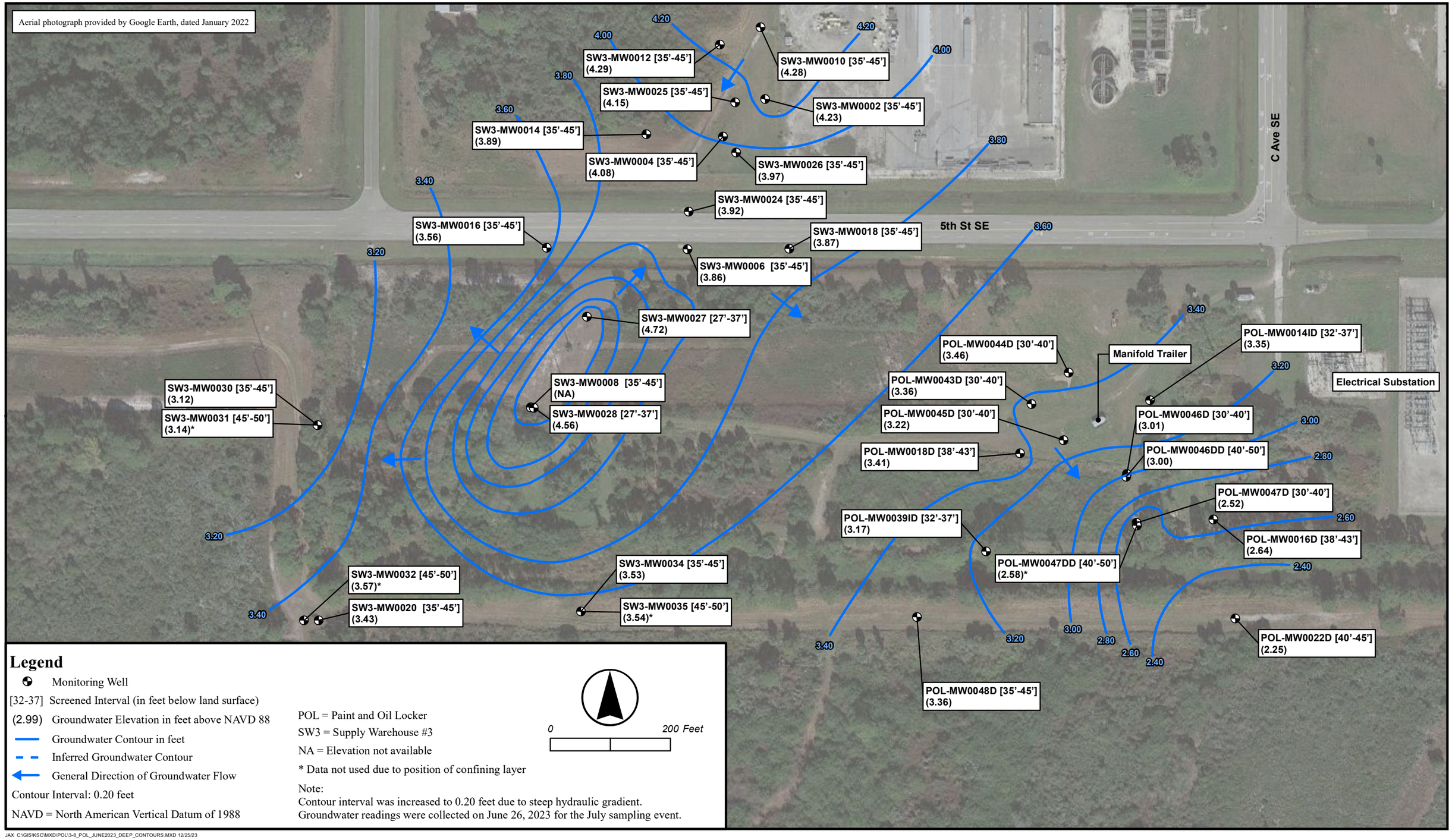
JAX C:\GIS\KSC\MXD\POL\3-6_POL_JUNE2023_INTERMEDIATE_CONTOURS.MXD 12/25/23

FIGURE 3-7 DEEP GROUNDWATER CONTOUR MAP - DECEMBER 2022
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



JAX C:\GIS\KSC\MXD\POL\3-7_POL_DEC2022_DEEP_CONTOURS.MXD 12/25/23

FIGURE 3-8 DEEP GROUNDWATER CONTOUR MAP - JULY 2023
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



Legend

- Monitoring Well
- [32-37] Screened Interval (in feet below land surface)
- (2.99) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

Contour Interval: 0.20 feet

NAVD = North American Vertical Datum of 1988

POL = Paint and Oil Locker

SW3 = Supply Warehouse #3

NA = Elevation not available

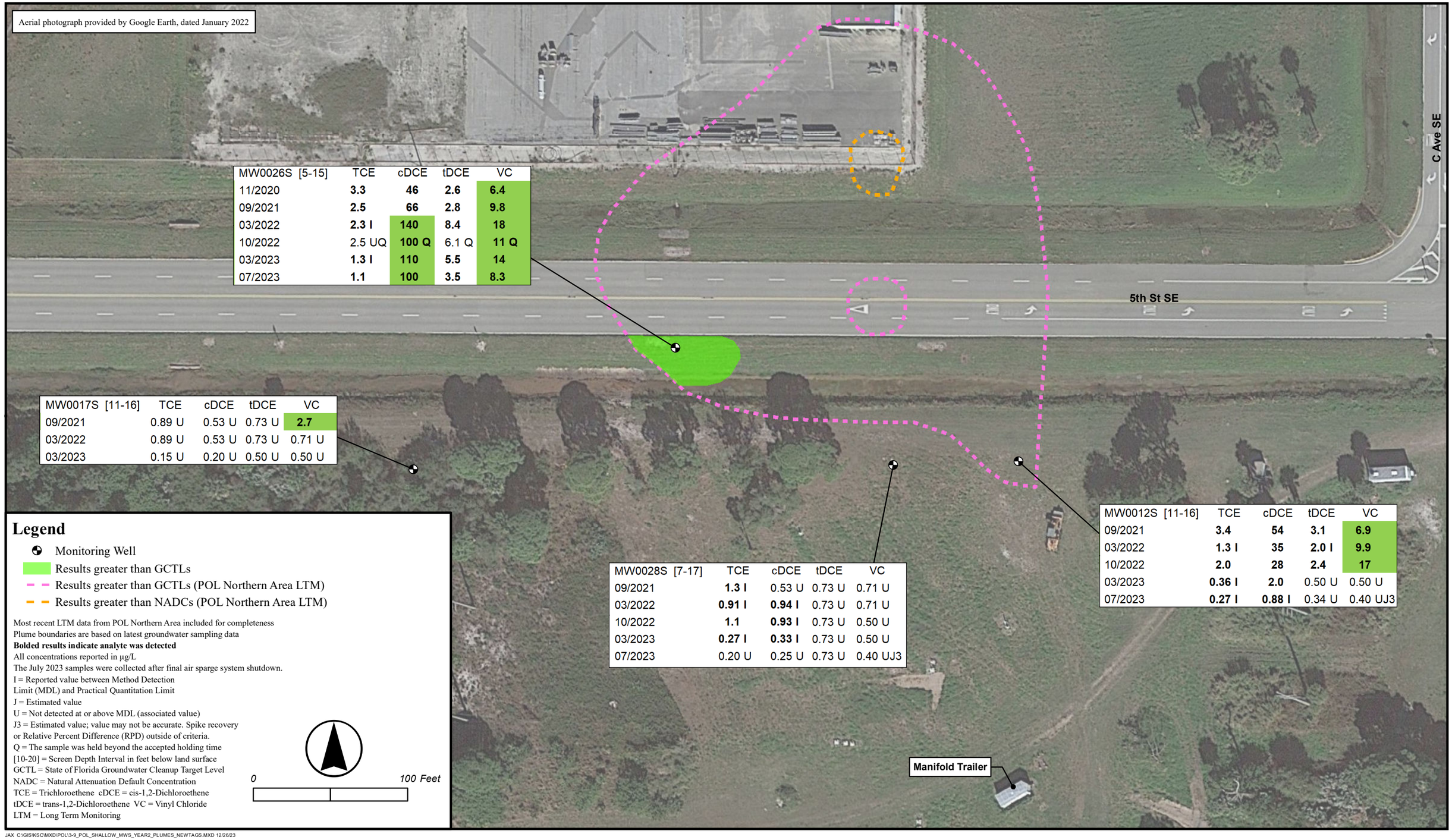
* Data not used due to position of confining layer

Note:
Contour interval was increased to 0.20 feet due to steep hydraulic gradient.
Groundwater readings were collected on June 26, 2023 for the July sampling event.

JAX C:\GIS\KSC\MXD\POL\3-8_POL_JUNE2023_DEEP_CONTOURS.MXD 12/25/23

FIGURE 3-9 YEAR 2 POL SOUTHERN TREATMENT AREA GROUNDWATER CONCENTRATIONS - SHALLOW ZONE

SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



MW0026S [5-15]	TCE	cDCE	tDCE	VC
11/2020	**3.3**	**46**	**2.6**	**6.4**
09/2021	**2.5**	**66**	**2.8**	**9.8**
03/2022	**2.3 I**	**140**	**8.4**	**18**
10/2022	2.5 UQ	**100 Q**	6.1 Q	**11 Q**
03/2023	**1.3 I**	**110**	**5.5**	**14**
07/2023	**1.1**	**100**	**3.5**	**8.3**

MW0017S [11-16]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	**2.7**
03/2022	0.89 U	0.53 U	0.73 U	0.71 U
03/2023	0.15 U	0.20 U	0.50 U	0.50 U

MW0028S [7-17]	TCE	cDCE	tDCE	VC
09/2021	**1.3 I**	0.53 U	0.73 U	0.71 U
03/2022	**0.91 I**	**0.94 I**	0.73 U	0.71 U
10/2022	**1.1**	**0.93 I**	0.73 U	0.50 U
03/2023	**0.27 I**	**0.33 I**	0.73 U	0.50 U
07/2023	0.20 U	0.25 U	0.73 U	0.40 UJ3

MW0012S [11-16]	TCE	cDCE	tDCE	VC
09/2021	**3.4**	**54**	**3.1**	**6.9**
03/2022	**1.3 I**	**35**	**2.0 I**	**9.9**
10/2022	**2.0**	**28**	**2.4**	**17**
03/2023	**0.36 I**	**2.0**	0.50 U	0.50 U
07/2023	**0.27 I**	**0.88 I**	0.34 U	0.40 UJ3

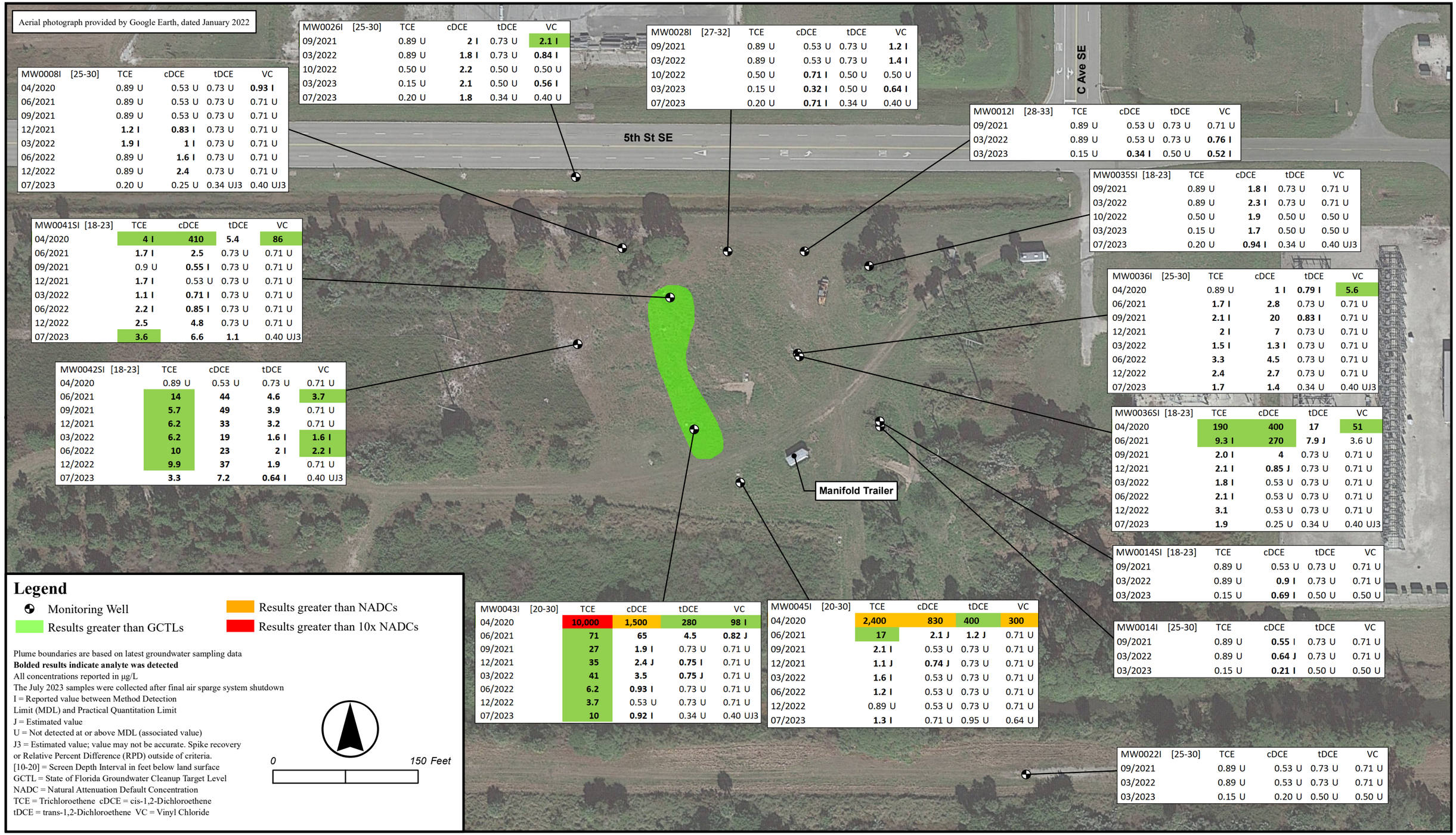
Legend

- Monitoring Well
- Results greater than GCTLs
- Results greater than GCTLs (POL Northern Area LTM)
- Results greater than NADCs (POL Northern Area LTM)

Most recent LTM data from POL Northern Area included for completeness
Plume boundaries are based on latest groundwater sampling data
Bolded results indicate analyte was detected
All concentrations reported in µg/L
The July 2023 samples were collected after final air sparge system shutdown.
I = Reported value between Method Detection
Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
J3 = Estimated value; value may not be accurate. Spike recovery
or Relative Percent Difference (RPD) outside of criteria.
Q = The sample was held beyond the accepted holding time
[10-20] = Screen Depth Interval in feet below land surface
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride
LTM = Long Term Monitoring

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FIGURE 3-10 YEAR 2 POL SOUTHERN TREATMENT AREA GROUNDWATER CONCENTRATIONS -INTERMEDIATE ZONE
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



MW0008I [25-30]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	0.53 U	0.73 U	**0.93 I**
06/2021	0.89 U	0.53 U	0.73 U	0.71 U
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
12/2021	**1.2 I**	**0.83 I**	0.73 U	0.71 U
03/2022	**1.9 I**	**1 I**	0.73 U	0.71 U
06/2022	0.89 U	**1.6 I**	0.73 U	0.71 U
12/2022	0.89 U	**2.4**	0.73 U	0.71 U
07/2023	0.20 U	0.25 U	0.34 UJ3	0.40 UJ3

MW0026I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**2 I**	0.73 U	**2.1 I**
03/2022	0.89 U	**1.8 I**	0.73 U	**0.84 I**
10/2022	0.50 U	**2.2**	0.50 U	0.50 U
03/2023	0.15 U	**2.1**	0.50 U	**0.56 I**
07/2023	0.20 U	**1.8**	0.34 U	0.40 U

MW0028I [27-32]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	**1.2 I**
03/2022	0.89 U	0.53 U	0.73 U	**1.4 I**
10/2022	0.50 U	**0.71 I**	0.50 U	0.50 U
03/2023	0.15 U	**0.32 I**	0.50 U	**0.64 I**
07/2023	0.20 U	**0.71 I**	0.34 U	0.40 U

MW0012I [28-33]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	0.53 U	0.73 U	**0.76 I**
03/2023	0.15 U	**0.34 I**	0.50 U	**0.52 I**

MW0035SI [18-23]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**1.8 I**	0.73 U	0.71 U
03/2022	0.89 U	**2.3 I**	0.73 U	0.71 U
10/2022	0.50 U	**1.9**	0.50 U	0.50 U
03/2023	0.15 U	**1.7**	0.50 U	0.50 U
07/2023	0.20 U	**0.94 I**	0.34 U	0.40 UJ3

MW0041SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	**4 I**	**410**	**5.4**	**86**
06/2021	**1.7 I**	**2.5**	0.73 U	0.71 U
09/2021	0.9 U	**0.55 I**	0.73 U	0.71 U
12/2021	**1.7 I**	0.53 U	0.73 U	0.71 U
03/2022	**1.1 I**	**0.71 I**	0.73 U	0.71 U
06/2022	**2.2 I**	**0.85 I**	0.73 U	0.71 U
12/2022	**2.5**	**4.8**	0.73 U	0.71 U
07/2023	**3.6**	**6.6**	**1.1**	0.40 UJ3

MW0036I [25-30]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	**1 I**	**0.79 I**	**5.6**
06/2021	**1.7 I**	**2.8**	0.73 U	0.71 U
09/2021	**2.1 I**	**20**	**0.83 I**	0.71 U
12/2021	**2 I**	**7**	0.73 U	0.71 U
03/2022	**1.5 I**	**1.3 I**	0.73 U	0.71 U
06/2022	**3.3**	**4.5**	0.73 U	0.71 U
12/2022	**2.4**	**2.7**	0.73 U	0.71 U
07/2023	**1.7**	**1.4**	0.34 U	0.40 UJ3

MW0042SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	0.53 U	0.73 U	0.71 U
06/2021	**14**	**44**	**4.6**	**3.7**
09/2021	**5.7**	**49**	**3.9**	0.71 U
12/2021	**6.2**	**33**	**3.2**	0.71 U
03/2022	**6.2**	**19**	**1.6 I**	**1.6 I**
06/2022	**10**	**23**	**2 I**	**2.2 I**
12/2022	**9.9**	**37**	**1.9**	0.71 U
07/2023	**3.3**	**7.2**	**0.64 I**	0.40 UJ3

MW0036SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	**190**	**400**	**17**	**51**
06/2021	**9.3 I**	**270**	**7.9 J**	3.6 U
09/2021	**2.0 I**	**4**	0.73 U	0.71 U
12/2021	**2.1 I**	**0.85 J**	0.73 U	0.71 U
03/2022	**1.8 I**	0.53 U	0.73 U	0.71 U
06/2022	**2.1 I**	0.53 U	0.73 U	0.71 U
12/2022	**3.1**	0.53 U	0.73 U	0.71 U
07/2023	**1.9**	0.25 U	0.34 U	0.40 UJ3

MW0014SI [18-23]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	**0.9 I**	0.73 U	0.71 U
03/2023	0.15 U	**0.69 I**	0.50 U	0.50 U

MW0043I [20-30]	TCE	cDCE	tDCE	VC
04/2020	**10,000**	**1,500**	**280**	**98 I**
06/2021	**71**	**65**	**4.5**	**0.82 J**
09/2021	**27**	**1.9 I**	0.73 U	0.71 U
12/2021	**35**	**2.4 J**	**0.75 I**	0.71 U
03/2022	**41**	**3.5**	**0.75 J**	0.71 U
06/2022	**6.2**	**0.93 I**	0.73 U	0.71 U
12/2022	**3.7**	0.53 U	0.73 U	0.71 U
07/2023	**10**	**0.92 I**	0.34 U	0.40 UJ3

MW0045I [20-30]	TCE	cDCE	tDCE	VC
04/2020	**2,400**	**830**	**400**	**300**
06/2021	**17**	**2.1 J**	**1.2 J**	0.71 U
09/2021	**2.1 I**	0.53 U	0.73 U	0.71 U
12/2021	**1.1 J**	**0.74 J**	0.73 U	0.71 U
03/2022	**1.6 I**	0.53 U	0.73 U	0.71 U
06/2022	**1.2 I**	0.53 U	0.73 U	0.71 U
12/2022	0.89 U	0.53 U	0.73 U	0.71 U
07/2023	**1.3 I**	0.71 U	0.95 U	0.64 U

MW0014I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**0.55 I**	0.73 U	0.71 U
03/2022	0.89 U	**0.64 J**	0.73 U	0.71 U
03/2023	0.15 U	**0.21 I**	0.50 U	0.50 U

MW0022I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	0.53 U	0.73 U	0.71 U
03/2023	0.15 U	0.20 U	0.50 U	0.50 U

Legend

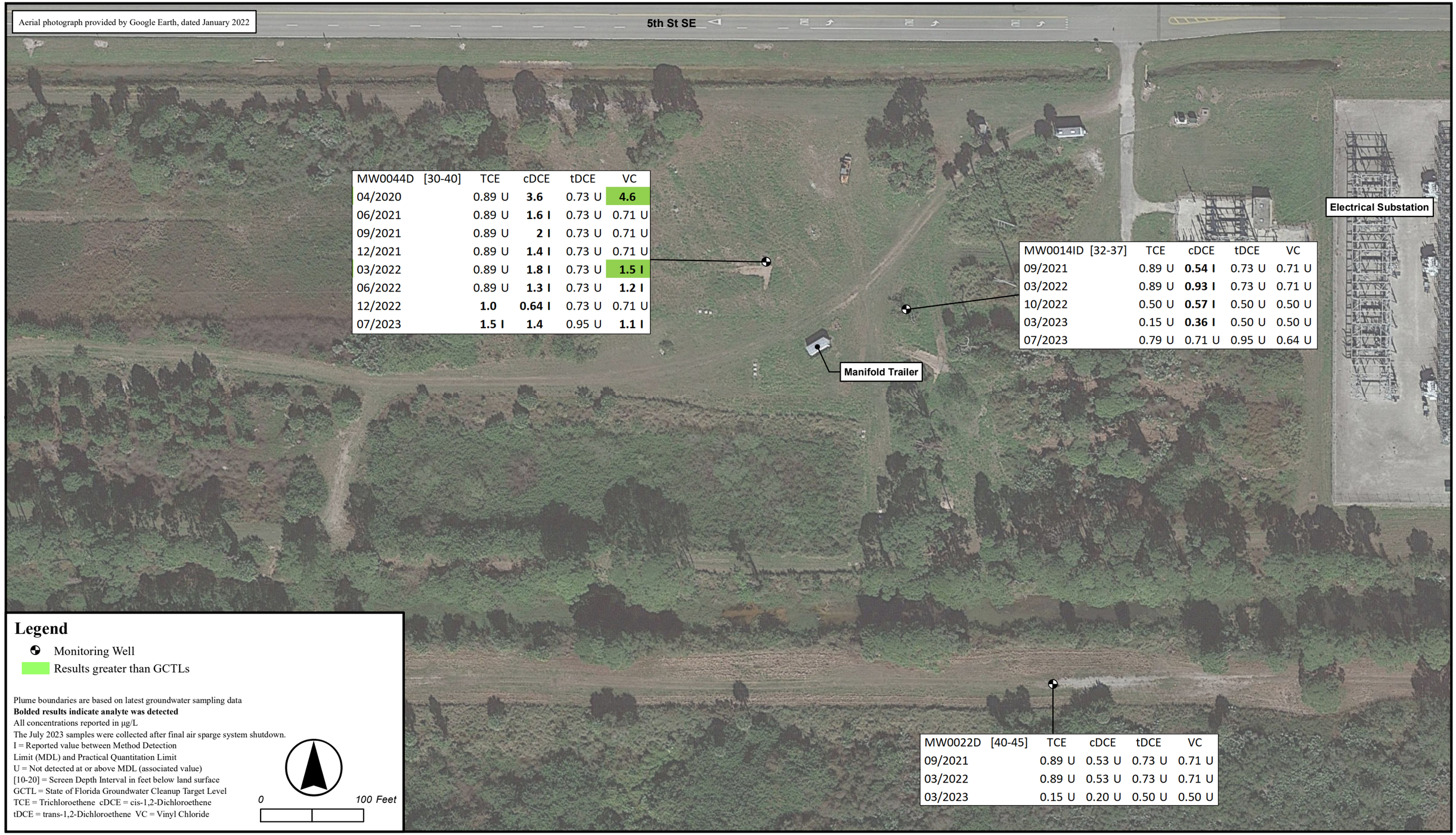
- Monitoring Well
- Results greater than GCTLs
- Results greater than NADCs
- Results greater than 10x NADCs

Plume boundaries are based on latest groundwater sampling data
Bolded results indicate analyte was detected
All concentrations reported in µg/L
The July 2023 samples were collected after final air sparge system shutdown
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
J3 = Estimated value; value may not be accurate. Spike recovery or Relative Percent Difference (RPD) outside of criteria.
[10-20] = Screen Depth Interval in feet below land surface
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

0 150 Feet

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FIGURE 3-11 YEAR 2 POL SOUTHERN TREATMENT AREA GROUNDWATER CONCENTRATIONS - DEEP ZONE
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



MW0044D [30-40]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	**3.6**	0.73 U	**4.6**
06/2021	0.89 U	**1.6 I**	0.73 U	0.71 U
09/2021	0.89 U	**2 I**	0.73 U	0.71 U
12/2021	0.89 U	**1.4 I**	0.73 U	0.71 U
03/2022	0.89 U	**1.8 I**	0.73 U	**1.5 I**
06/2022	0.89 U	**1.3 I**	0.73 U	**1.2 I**
12/2022	**1.0**	**0.64 I**	0.73 U	0.71 U
07/2023	**1.5 I**	**1.4**	0.95 U	**1.1 I**

MW0014ID [32-37]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**0.54 I**	0.73 U	0.71 U
03/2022	0.89 U	**0.93 I**	0.73 U	0.71 U
10/2022	0.50 U	**0.57 I**	0.50 U	0.50 U
03/2023	0.15 U	**0.36 I**	0.50 U	0.50 U
07/2023	0.79 U	0.71 U	0.95 U	0.64 U

MW0022D [40-45]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	0.53 U	0.73 U	0.71 U
03/2023	0.15 U	0.20 U	0.50 U	0.50 U

Legend

- Monitoring Well
- Results greater than GCTLs

Plume boundaries are based on latest groundwater sampling data
Bolded results indicate analyte was detected
All concentrations reported in µg/L
The July 2023 samples were collected after final air sparge system shutdown.
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
U = Not detected at or above MDL (associated value)
[10-20] = Screen Depth Interval in feet below land surface
GCTL = State of Florida Groundwater Cleanup Target Level
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

0 100 Feet

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FIGURE 3-12 AIR SAMPLING LOCATIONS - JANUARY 2023
SWMU 067, POL, KENNEDY SPACE CENTER, FLORIDA

POL-SW3 LTM-PMR
Revision: 0
January 2024



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SECTION IV
LONG TERM MONITORING - POL NORTHERN AREA AND SW3

The AS system treating SW3 and POL Northern Area was operational beginning in May 2009, with expansions in December 2012 and June 2013, and shut down in March 2018. Each site then transitioned to an LTM program per KSCRT consensus (Meeting Minutes 1803-M17 and M19, Decisions 1803-D61 to D64).

Annual LTM events were conducted in October 2022, December 2022 and July 2023 in the POL Northern Area and adjacent SW3. Additionally, well POL-MW0026S was also included in the POL Southern Treatment Area semi-annual sampling program, with sampling occurring in March 2023, and July 2023. This well was also discussed in the POL Southern Treatment Area section of this report (Section III). Sampling rationale for the Year 4 LTM events is presented in Table 4-1.

4.1 MONITORING WELL INSTALLATION

During the October 2022 KSCRT Meeting, FDEP requested additional downgradient monitoring wells to be installed at both POL and SW3 to monitor for LCP migration. In accordance with Action Item 2210-A12, proposed downgradient monitoring well locations were presented to FDEP during a teleconference and approved. The nine proposed monitoring wells (SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, SW3-MW0035, POL-MW0048I, and POL-MW0048D) were installed between March 23 to April 4, 2023, and later developed on April 12, 2023. All activities were performed under the supervision of a field geologist. The corresponding monitoring well construction details and installation dates are presented in Table 4-2 and a well schematic is presented on Figure 4-1. The locations of the new wells are presented on Figure 4-2 in conjunction with the existing monitoring well network.

The new monitoring wells were completed using rotosonic drilling techniques by Drill Pro, LLC, a Florida licensed driller. As shown on Figure 4-1, each well was constructed using 1-inch inside diameter Schedule 40 polyvinyl chloride (PVC) casing. Casing sections were flush-joint threaded

with a neoprene "O" ring on the male threaded end to render the joint watertight. Well screens were 0.010-inch slotted Schedule 40 PVC and were pre-packed with 20/30 grade filter pack. The annular space of the borehole was backfilled with an American Society of Testing and Materials 30/65 fine sand seal to 1 foot above the well screen, followed by grout (Portland cement-bentonite slurry).

The surface completion at each new monitoring well is flush-mount, centered in a 2-foot by 2-foot concrete pad. Well identification tags were affixed into the concrete pad of each new well that provides well name, screened interval, and installation date. Each well was developed via purging and evacuation following installation. All development and decontamination water generated by well installation and development was containerized in totes and characterized. The water was determined to be non-hazardous and was transferred to KSC's on-site IDW treatment system located in the CCF East Area, per KSC's IDW disposal protocols.

The new wells were surveyed by Kugelmann Land Surveying, Inc., a Florida licensed surveyor, on May 16, 2023 for spatial coordinates relative to the Florida State Plane Coordinate System and top-of-casing elevations relative to the NAVD of 1988. The field records and survey information for the 2023 well installations are provided in Appendix E.

4.2 GROUNDWATER SAMPLING ACTIVITIES

Annual groundwater LTM sampling was conducted during three separate sampling events. The three events were conducted in October 2022 (8 wells), December 2022 (3 wells), and July 2023 (9 wells). Semi-annual sampling was conducted during two sampling events in March 2023 and July 2023.

Year 4 LTM monitoring well and sampling rationales are listed in Table 4-1. Monitoring well purging and sampling activities were conducted in accordance with the SAP for the RCRA Corrective Action Program at KSC (NASA, 2017b) and FDEP SOPs. Groundwater samples were collected using low-flow sampling techniques at each sample location (Figure 4-2). Purge logs and sampling field notes are included in Appendix B. All purge and decontamination water generated through sampling was containerized into totes, characterized, determined to be non-

hazardous, and then transferred to KSC's on-site IDW treatment system located in the CCF East Area, per KSC's IDW disposal protocols.

All groundwater samples collected during the LTM sampling events were analyzed by Eurofins Environmental Testing Southeast, LLC in Altamonte Springs, Florida for VOCs by USEPA Method 8260B during the October 2022 sampling event and USEPA Method 8260D during the December 2022, March 2023, and July 2023 sampling events. Based on past sampling events, unpreserved vials were also collected due to the potential for excess effervescing in the preserved samples. Chain-of-custody forms and laboratory analytical results for all groundwater samples are provided in Appendix C.

4.3 GROUNDWATER FIELD MEASUREMENTS

Temperature, pH, conductivity, turbidity, DO, and ORP were measured and recorded in the field during monitoring well sampling activities (see sample log sheets in Appendix B). A summary of groundwater quality parameter data is provided in Table 4-3. The field parameters were measured in accordance with FDEP's SOP for Field Sampling (FS 2200) prior to groundwater sampling, to ensure that the samples were representative of aquifer conditions. The following presents a summary of the stabilized field measurements recorded before sampling.

4.3.1 POL Northern Area. During the October 2022 sampling event, three wells (POL-MW0026S, POL-MW0033SI, and POL-MW0034S) were sampled. Groundwater temperatures ranged from 29.92 to 30.19°C, with an average of 30.02°C. Readings of pH ranged from 4.56 to 5.57, with an average of 4.92. Conductivity ranged from 346.0 to 874.9 µS/cm, with an average of 566.5 µS/cm. DO values varied from 0.05 to 0.49 mg/L, with an average value of 0.21 mg/L. Turbidity readings ranged from 1.19 to 36.12 NTU, with an average value of 15.79 NTU. ORP readings ranged from 99.6 to 126.5 mV, with an average reading of 116.6 mV.

During the December 2022 sampling event, three wells (POL-MW0009S, POL-MW0031S, and POL-MW0034S) were sampled. Groundwater temperatures ranged from 24.50 to 25.20°C, with an average of 24.90°C. Readings of pH ranged from 3.99 to 6.04, with an average of 5.20. Conductivity ranged from 150.0 to 1,538.0 µS/cm, with an average of 661.2 µS/cm. DO values varied from 0.15 to 0.74 mg/L, with an average of 0.44 mg/L. Turbidity readings ranged from

0.77 to 2.93 NTU, with an average of 1.58 NTU. ORP readings ranged from 25.2 to 62.0 mV, with an average reading of 49.9 mV.

During the March 2023 sampling event, two wells (POL-MW0031S and POL-MW0034S) were sampled. Groundwater temperatures ranged from 25.3 to 30.1°C, with an average of 27.70°C. Readings of pH ranged from 6.23 to 6.39 with an average of 6.31. Conductivity ranged from 172.8 to 249.1 µS/cm, with an average of 211.0 µS/cm. DO values varied from 0.31 to 0.54 mg/L, with an average of 0.43 mg/L. Turbidity readings ranged from 3.37 to 3.41 NTU, with an average of 3.39 NTU. ORP readings ranged from -23.0 to 59.5 mV, with an average of 18.3 mV.

During the July 2023 sampling event, two wells (POL-MW0048D and POL-MW0048I) were sampled. Groundwater temperatures were measured at 25.3°C in both wells. Readings of pH ranged from 6.73 to 6.83 with an average of 6.78. Conductivity ranged from 1,038.0 to 1,066.0 µS/cm, with an average of 1,052.0 µS/cm. DO values varied from 0.23 to 0.25 mg/L, with an average of 0.24 mg/L. Turbidity readings ranged from 6.81 to 9.19 NTU, with an average of 8.00 NTU. ORP readings ranged from -28.9 to 3.7 mV, with an average of -12.6 mV.

4.3.2 SW3. During the October 2022 sampling event, five monitoring wells (SW3-MW0009, SW3-MW0024, SW3-MW0025, SW3-MW0027, and SW3-MW0028) were sampled. Groundwater temperatures ranged from 25.10 to 26.30°C, with an average of 25.93°C. Readings of pH ranged from 6.43 to 6.86, with an average of 6.64. Conductivity ranged from 707.6 to 2,668.0 µS/cm, with an average of 1,689.1 µS/cm. DO values varied from 0.04 to 0.07 mg/L, with an average value of 0.05 mg/L. Turbidity readings ranged from 0.39 to 11.48 NTU, with an average value of 3.49 NTU. ORP readings ranged from -135.5 to -6.9 mV, with an average reading of -101.3 mV.

During the July 2023 sampling event, seven monitoring wells (SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, and SW3-MW0035) were sampled. Groundwater temperatures in seven wells ranged from 25.20 to 27.00°C, with an average of 25.99 °C. Readings of pH ranged from 6.62 to 6.94, with an average of 6.87. Conductivity ranged from 548.0 to 2,716.0 µS/cm, with an average of 1,432.3 µS/cm. DO values

varied from 0.15 to 0.52 mg/L, with an average of 0.36 mg/L. Turbidity readings ranged from 5.97 to 11.83 NTU, with an average of 8.26 NTU. ORP readings ranged from -83.5 to 14.7 mV, with an average reading of -40.5 mV.

4.4 GROUNDWATER ANALYTICAL RESULTS – POL NORTHERN AREA

During this reporting period, LTM was conducted at the POL Northern Area in October 2022, December 2022, March 2023, and July 2023. The subsections below present the groundwater analytical results of the COCs. The results are shown on Figure 4-3 and summarized in Table 4-4.

Although not included in the following evaluation of the COCs, additional analytes such as toluene and 1,1-Dichloroethene were detected at concentrations less than their respective GCTLs. Methylene chloride, a common lab contaminant, was detected greater than the GCTL (5 µg/L) at 34 µg/L, and was flagged as possible contamination from the laboratory. All results can be found in the laboratory analytical reports in Appendix C.

4.4.1 October 2022. Two monitoring wells (POL-MW0026S and POL-MW0033SI) were sampled in the POL Northern Area in October 2022 to support the LTM program. The laboratory analyzed the sample for well POL-MW0026S outside of the accepted holding time. However, the October 2022 data is consistent when compared to analytical data collected from POL-MW0026S during the March 2023 and July 2023 PM sampling events (Section 3.6). Because site closeout is not being considered at this time, these data are considered usable for this report.

TCE was not detected in both wells sampled in October 2022. At well POL-MW0026S, TCE has not been detected at a concentration greater than the GCTL since November 2020, the year after LTM was initiated. At well POL-MW0033SI, this event marked the first time TCE had a non-detect result; prior events, concentrations were greater than the GCTL.

cDCE was detected at a concentration less than the GCTL at MW0033SI in October 2022, consistent with previous LTM events. At well MW0026S, cDCE was detected greater than the GCTL at 100 µg/L, a decrease from the previous sampling event (March 2022) concentration of 140 µg/L which was the first time cDCE was detected greater than the GCTL.

tDCE was detected at concentrations less than the GCTL at both wells and, results have been less than the GCTL or non-detect since LTM was initiated.

VC was detected greater than the GCTL in well POL-MW0026S at 11 µg/L. VC concentrations have been greater than the GCTL at this well since October 2019 with results generally being consistent, indicating stability. VC was not detected in well POL-MW0033SI.

4.4.2 December 2022. Three monitoring wells (POL-MW0009S, POL-MW0031S, and POL-MW0034S) were sampled in the POL Northern Area in December 2022 to support the LTM program.

TCE was detected in wells POL-MW0009S and POL-MW0034S at concentrations greater than the GCTL, while the POL-MW0034S result also exceeded the NADC. Well, POL-MW0009S, had a concentration at 6.0 µg/L, a decrease from the previous event (22 µg/L in November 2020), but relatively the same as the October 2019 result of 5.6 µg/L, indicating stability. Well POL-MW0034S continues to have the highest detections of TCE in the POL LTM network. The December 2022 result exceeded the NADC at 1,200 µg/L, the first time since November 2020. At well MW0031S, TCE was not detected.

cDCE was detected at concentrations less than the GCTL in all three monitoring wells. The first exceedance above the GCTL in well POL-MW0034S occurred in the previous event (June 2022), but the concentration decreased to below the GCTL in December 2022.

tDCE was non-detect in all three wells in December 2022, relatively consistent with results since LTM was initiated where tDCE has either been detected at a concentration less than the GCTL or non-detect.

VC was not detected in any of the three monitoring wells; however, in well MW0034S, it should be noted that the MDL had an elevated value of 18 µg/L, greater than the GCTL.

4.4.3 March 2023. Two monitoring wells (POL-MW0031S and POL-MW0034S) were sampled in the POL Northern Area in March 2023 to support the LTM program. All COC results

in well POL-MW0031S were either non-detect or were detected at concentrations less than their respective GCTLs.

In well POL-MW0034S, TCE exceeded the GCTL and NADC with a concentration of 540 µg/L. This was a decrease from the previous event (December 2022 at 1,200 µg/L) where TCE exceeded the NADC for the first time since November 2020.

cDCE was detected at a concentration less than the GCTL and VC was non-detect with an elevated MDL (2.5 µg/L) for the second consecutive event.

tDCE was not detected at well POL-MW0034S.

4.4.4 July 2023. Recently installed wells, POL-MW0048I and POL-MW0048D, were sampled for the first time in July 2023. Note, these wells are located in the POL Southern Treatment Area, but are part of the LTM network and are therefore discussed here. Results for TCE, cDCE, tDCE, and VC were non-detect in both wells.

4.4.5 POL Northern Area Year 4 Summary. The LCP footprint at the end of Year 4 (Figure 4-3) was 1.33 acres, a decrease from 1.69 acres at the end of Year 3. The decrease in the LCP is attributed to TCE results at the upgradient monitoring well, POL-MW0033SI, being less than the GCTL, the first time since LTM was initiated. POL-MW0034S experienced an increase in TCE with concentrations exceeding the NADC during both events conducted in Year 4; 1,200 µg/L in December 2022 and 540 µg/L in March 2023. The last time TCE exceeded the NADC at this well was in November 2020. Increased concentrations at well POL-MW0034S in Year 4 indicate an isolated HCP with a horizontal footprint of 0.03 acre. As noted in previous reports, the AS system that previously operated in the POL Northern Area was determined to not be effective for treating the TCE remaining at POL-MW0034S, and therefore was shut down in March 2018. The significant decrease in TCE concentrations in POL-MW0034S from October 2018 to October 2019 prompted the DPT Confirmation Sampling event at 25-foot step outs in October 2019 to determine if plume migration had occurred. Results from the October 2019 DPT sampling event near POL-MW0034S indicated that TCE had not migrated away from the well. Based on review of the data, it appears that water level directly contributes to TCE concentrations in POL-MW0034S. Results from the remaining LTM wells were similar to prior

events, with no significant observations. All COC results in the two new wells installed at POL Southern Treatment Area to monitor the downgradient edge of the LCP (POL-MW0048I and POL-MW0048D) were non-detect.

Future evaluation should utilize Mann-Kendall Trend Analysis to determine if concentrations are stable, increasing or decreasing at wells with COCs exceeding the GCTLs.

4.5 GROUNDWATER ANALYTICAL RESULTS – SW3

The following subsections discuss the analytical results from LTM sampling conducted in October 2022 and July 2023 at SW3. The results are shown on Figure 4-4 and summarized in Table 4-4.

Although not included in the following evaluation of the COCs, additional analytes such as 1,1-dichloroethene, acetone, and chloroform were detected at concentrations less than their respective GCTLs. These results can be found in the laboratory analytical reports in Appendix C.

4.5.1 October 2022. Five monitoring wells were sampled at SW3 in October 2022 to support the LTM program (SW3-MW0009, SW3-MW0024, SW3-MW0025, SW3-MW0027, and SW3-MW0028).

Results for TCE, cDCE, and tDCE at the five wells were either non-detect or were detected at concentrations less than their respective GCTLs, with no notable observations

VC was detected at a concentration greater than the GCTL in four of the five wells sampled in October 2022. Well SW3-MW0027 continued to exhibit the highest concentration (40 µg/L) at the SW3. VC concentrations in wells SW3-MW0024, SW3-MW0025, and SW3-MW0027 have fluctuated only slightly over the past three events, indicative that concentrations are stable. Well SW3-MW0028 experienced its highest detection of VC since LTM was initiated at 37 µg/L, slightly greater than the October 2022 result of 34 µg/L. VC concentrations at this well also appear to be stable. Although VC was detected at a concentration less than the GCTL at well SW3-MW0009, it is worth noting that this was the first occurrence where VC has been below the GCTL in this well.

4.5.2 July 2023. The new monitoring wells installed (SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, and SW3-MW0035) were sampled at SW3 in July 2023 to support the existing LTM network. TCE, cDCE, tDCE, and VC were not detected in any of the new wells.

4.5.3 SW3 Year 4 Summary. The LCP footprint[6] at the end of Year 4 was 5.78 acres (Figure 4-4), a decrease from Year 3 (6.40 acres). VC was less than the GCTL in upgradient monitoring well SW3-MW0009 for the first time, causing the decreased LCP area. Concentrations at wells SW3-MW0024, SW3-MW0025, SW3-MW0027, and SW3-MW0028 were generally consistent with previous events and no notable observations were found. All COC concentrations were non-detect at the seven new wells (SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, and SW3-MW0035) installed to monitor the downgradient edge of the LCP.

Future evaluation should utilize Mann-Kendall Trend Analysis to determine if concentrations are stable, increasing or decreasing at wells experiencing COCs exceeding the GCTLs.

[6] The southern and southeastern LCP and the HCPs are inferred from results obtained during the 2019 and 2021 LCP delineation DPT events.

Table 4-1 POL and SW3 LTM Year 4 Sampling Rationale

Monitoring Well location	Monitoring Well Name	Screened Interval (feet bls)	Year 4 Sampling Frequency	LTM Rationale
SW3-	MW0009	15-25	Annually	Upgradient of LCP.
	MW0024	35-45	Annually	Along centerline of former remedial zone.
	MW0025	35-45	Annually	Western edge of former remedial zone.
	MW0027	27-37	Annually	Along centerline of former remedial zone.
	MW0028	27-37	Annually	Downgradient of former HCP.
	MW0029	15-25	Annually	Shallow Eastern LCP Side gradient.
	MW0030	35-45	Annually	Installed to define the plume perimeter.
	MW0031	45-50	Annually	Installed to define the plume perimeter.
	MW0032	45-50	Annually	Installed to define the plume perimeter.
	MW0033	25-35	Annually	Installed to define the plume perimeter.
	MW0034	35-45	Annually	Installed to define the plume perimeter.
	MW0035	45-50	Annually	Installed to define the plume perimeter.
POL-	MW0009S	7-12	Annually	Installed to define the plume perimeter.
	MW0026S	5-15	Annually	TCE and VC > GCTL in May 2018.
	MW0031S	5-15	Semi-Annually	Downgradient of MW0034S.
	MW0033SI	18-23	Annually	TCE > GCTL in May 2018.
	MW0034S	5-15	Semi-Annually	TCE > 10XNADC in October 2018.
	MW0048I	25-35	Annually	Installed to define the plume perimeter.
	MW0048D	35-45	Annually	Installed to define the plume perimeter.

Notes:

LCP = Low concentration plume

HCP = High concentration plume

TCE = Trichloroethene

VC = Vinyl Chloride

GCTL = Groundwater Cleanup Target Level

10x NADC = Ten times Natural Attenuation Default Concentration

POL = Paint and Oil Locker

SW3 = Supply Warehouse #3

> = Analyte result greater than

LTM = Long-Term monitoring

Table 4-2. 2023 POL and SW3 Monitoring Well Construction Details

Monitoring Well Name	Well Installation Date	Well Diameter (inches)	Screened Interval (feet bls)	Screen Bottom (feet bls)	Screen Type	Boring Depth (feet)	Coordinates			
							TOC Elevation (feet above NAVD 88)	Ground Elevation (feet above NAVD 88)	Easting (meters)	Northing (meters)
SW3-MW0029	3/23/2023	1	15-25	25	0.010-inch slot	25	8.68	9.03	765899.88	1520197.02
SW3-MW0030	3/23/2023	1	35-45	45	0.010-inch slot	45	8.83	9.03	765900.67	1520191.36
SW3-MW0031	3/23/2023	1	45-50	50	0.010-inch slot	50	8.91	9.03	765900.98	1520185.24
SW3-MW0032	4/3/2023	1	45-50	50	0.010-inch slot	50	8.05	8.16	765907.35	1519865.41
SW3-MW0033	4/4/2023	1	25-35	35	0.010-inch slot	35	7.37	7.50	766357.93	1519886.48
SW3-MW0034	4/4/2023	1	35-45	45	0.010-inch slot	45	7.39	7.50	766353.97	1519886.52
SW3-MW0035	4/4/2023	1	45-50	50	0.010-inch slot	35	7.57	7.50	766350.05	1519886.79
POL-MW0048I	4/4/2023	1	25-35	35	0.010-inch slot	35	8.39	8.38	766910.14	1519869.69
POL-MW0048D	4/4/2023	1	35-45	45	0.010-inch slot	45	8.34	8.38	766906.58	1519870.22

Notes:

All wells constructed of polyvinyl chloride (PVC)

Easting and Northing coordinates relative to North American Datum of 1983 (NAD 83) State Plane Florida East (meters)

Elevations relative to North American Vertical Datum of 1988 (NAVD 88)

Survey information based on professional survey performed on 5/16/2023

All surface completions are flush-mounted

POL = Paint and Oil Locker

SW3 = Supply Warehouse #3

TOC = Top of casing

bls = below land surface.

Table 4-3. POL and SW3 LTM Field Measurements

Well ID	Sample Date	pH (S.U.)	Temp. (°C)	Cond. (µS/cm)	DO (mg/L)	Turbidity (NTU)	ORP (mV)
POL-MW0009S	12/27/2022	3.99	24.5	1,538.0	0.15	1.05	62.0
POL-MW0026S	10/13/2022	4.56	30.2	874.9	0.49	36.12	126.5
POL-MW0031S	12/22/2022	5.56	25.0	150.0	0.43	2.93	25.2
	3/9/2023	6.23	30.10	172.8	0.31	3.37	-23.0
POL-MW0033SI	10/13/2022	4.64	30.0	478.7	0.05	10.06	99.6
POL-MW0034S	10/13/2022	5.57	29.9	346.0	0.09	1.19	123.6
	12/21/2022	6.04	25.2	295.5	0.74	0.77	57.5
	3/9/2023	6.39	25.30	249.1	0.54	3.41	59.5
POL-MW0048I	7/6/2023	6.73	25.3	1,038.0	0.25	6.81	3.7
POL-MW0048D	7/6/2023	6.83	25.3	1,066.0	0.23	9.19	-28.9
SW3-MW0009	10/13/2022	6.43	26.1	707.6	0.06	11.48	-6.9
SW3-MW0024	10/18/2022	6.83	26.3	1,808.0	0.05	0.85	-121.5
SW3-MW0025	10/18/2022	6.86	25.9	1,113.0	0.04	0.85	-135.5
SW3-MW0027	10/18/2022	6.61	26.2	2,149.0	0.07	3.87	-107.5
SW3-MW0028	10/18/2022	6.48	25.1	2,668.0	0.05	0.39	-135.0
SW3-MW0029	7/6/2023	6.62	25.3	634.0	0.46	6.09	-44.2
SW3-MW0030	7/6/2023	6.92	27.0	1,803.0	0.48	7.40	-37.6
SW3-MW0031	7/6/2023	6.93	26.2	2,029.0	0.46	5.97	-66.0
SW3-MW0032	7/6/2023	6.85	25.2	1,124.0	0.52	6.60	-83.5
SW3-MW0033	7/6/2023	6.94	26.0	548.0	0.15	11.83	14.7
SW3-MW0034	7/6/2023	6.87	25.3	1,172.0	0.17	10.05	-15.7
SW3-MW0035	7/6/2023	6.93	26.9	2,716.0	0.30	9.85	-51.0

Notes:

Values shown are final stabilization readings recorded before collecting sample

MW0026S purged dry on 3/9/2023 and 7/6/2023. Followed FDEP guidelines and collected sample after sufficient recharge volume

LTM = Long-Term monitoring

POL = Paint and Oil Locker

SW3 = Supply Warehouse #3

°C = Degrees Celsius

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter

mV = millivolts

NTU = Nephelometric turbidity units

ORP = Oxidation/reduction potential

S.U. = Standard units

Temp. = Temperature

Cond. = Conductivity

DO = Dissolved Oxygen

Table 4-4 POL and SW3 LTM Analytical Results

Sample Location	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
Supply Warehouse #3						
SW3-MW0001	15-25	Oct-19	**4.9**	**1.7 I**	0.73 U	0.71 U
		Nov-20	**3.4**	**0.84 J**	0.73 U	0.71 U
		Oct-21	**2.7**	**1.2 I**	0.73 U	0.71 U
SW3-MW0006	35-45	Oct-19	0.89 U	**1.3 I**	0.73 U	**3.4**
		Nov-20	0.89 U	**0.70 J**	**0.77 J**	**1.4 J**
		Oct-21	0.89 U	**1.1 I**	0.73 U	**1.1 I**
SW3-MW0009	**15-25**	Oct-19	**1.3 I**	**25**	**3.8**	**63**
		Nov-20	**1.1 J**	**13**	**2.2 J**	**30**
		Oct-21	**2.1 I**	**13**	**2.2 I**	**29**
		Oct-22	0.50 U	**0.80 I**	0.50 U	**0.77 I**
SW3-MW0024	**35-45**	Oct-19	0.89 U	0.53 U	0.73 U	**5.0**
		Nov-20	0.89 U	**0.73 J**	0.73 U	**2.0 J**
		Oct-21	0.89 U	**0.85 I**	0.73 U	**2.0 I**
		Oct-22	0.50 U	**1.5**	**0.54 I**	**2.3**
SW3-MW0025	**35-45**	Oct-19	**7.5**	**23**	**3.2**	**14**
		Nov-20	**2.2 J**	**7.9**	**2.0 J**	**6.3**
		Oct-21	**1.1 I**	**11**	**2.1 I**	**5.3**
		Oct-22	**1.1**	**36**	**3.3**	**9.5**
SW3-MW0026	35-45	Oct-19	0.89 U	**1.7 I**	0.73 U	0.71 U
SW3-MW0027	**27-37**	Oct-19	0.89 U	0.53 U	**1.5 I**	**66**
		Nov-20	0.89 U	0.53 U	**1.4 J**	**40**
		Oct-21	0.89 U	0.53 U	**1.6 I**	**32**
		Oct-22	0.50 U	0.50 U	**1.6**	**40**
SW3-MW0028	**27-37**	Oct-19	0.89 U	0.53 U	0.73 U	**34**
		Nov-20	0.89 U	0.53 U	0.73 U	**15**
		Oct-21	0.89 U	0.53 U	0.73 U	**20**
		Oct-22	0.50 U	0.50 U	0.50 U	**37**
SW3-MW0029	**15-25**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0030	**35-45**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0031	**45-50**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0032	**45-50**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0033	**25-35**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0034	**35-45**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
SW3-MW0035	**45-50**	Jul-23	0.20 U	0.25 U	0.24 U	0.40 U
Paint and Oil Locker, Northern Area						
POL-MW0001S	3-13	Oct-19	0.89 U	0.53 U	0.73 U	0.71 U
POL-MW0009S	7-12	Oct-19	**5.6**	**4.4**	0.73 U	0.71 U
		Nov-20	**22**	**3.2**	0.73 U	0.71 U
		Dec-22	**6.0**	**1.0**	0.73 U	0.71 U
POL-MW0026S	**5-15**	Oct-19	**4.4**	**82**	**5.0**	**15**
		Nov-20	**3.3**	**46**	**2.6**	**6.4**
		Sep-21	**2.5**	**66**	**2.8**	**9.8**
		Oct-22	2.5 UQ	**100 Q**	**6.1 Q**	**11 Q**
POL-MW0031S	**5-15**	Oct-19	0.89 U	0.53 U	0.73 U	0.71 U
		Nov-20	0.89 U	0.53 U	0.73 U	0.71 U
		Oct-21	0.89 U	0.53 U	0.73 U	0.71 U
		Dec-22	0.89 U	**2.0**	0.73 U	0.71 U
		Mar-23	0.15 U	**0.71 I**	0.50 U	0.50 U
POL-MW0033I	25-30	Oct-19	**5.4**	**1.2 J**	0.73 U	0.71 U
		Nov-20	**35**	**30**	**15**	**0.78 J**
		Oct-21	**160**	**57**	**42**	**1.3 J**
POL-MW0033S	5-15	Oct-19	**1.5 J**	**0.66 J**	0.73 U	0.71 U
POL-MW0033SI	**18-23**	Oct-19	**3.6**	**1.8 J**	0.73 U	0.71 U
		Nov-20	**12**	**5.1**	**2.8**	0.71 U
		Oct-21	**34**	**7.9**	**5.3**	0.71 U
		Oct-22	0.50 U	**22**	**17**	0.50 U

Table 4-4 POL and SW3 LTM Analytical Results (Continued)

Sample Location	Screened Interval (feet bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
POL-MW0034S	**5-15**	Oct-19	**130 D**	**5.9**	0.73 U	0.71 U
		Nov-19	**120 D**	**4.4**	0.73 U	0.71 U
		Nov-20	**560 D**	**18**	0.73 U	0.71 U
		Sep-21	**130**	**24**	0.73 U	0.71 U
		Dec-21	**90**	**27**	0.73 U	0.71 U
		Mar-22	**170**	**22**	0.73 U	0.71 U
		Jun-22	**200**	**84**	**1.2 I**	**3.0**
		Dec-22	**1,200**	**37**	18 U	18 U
		Mar-23	**540**	**66**	2.5 U	2.5 U
POL-MW0048I	**25-35**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 UJ3
POL-MW0048D	**35-45**	Jul-23	0.20 U	0.25 U	0.34 U	0.40 UJ3

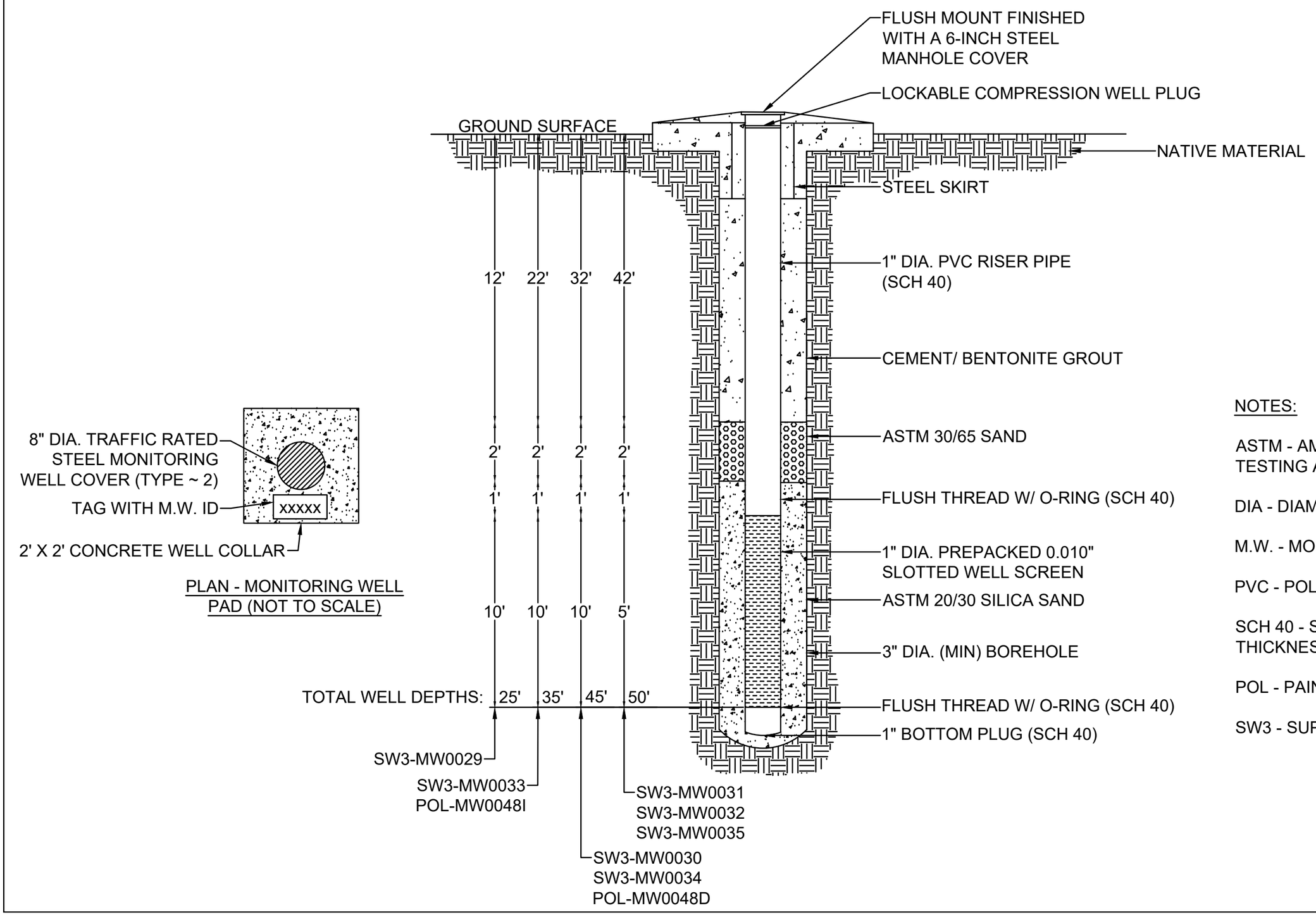
Notes:

Bolded Sample location and screen interval indicates well was sampled during the reporting period
Concentrations in µg/L
Shading indicates State of Florida Groundwater Cleanup Target Level exceedance; TCE = 3 µg/L, cDCE = 70 µg/L, tDCE = 100 µg/L, VC = 1 µg/L
Bolding indicates a concentration is greater than the method detection limit
bls = Below land surface
TCE = Trichloroethene
cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene
VC = Vinyl chloride
D = Sample was analyzed at dilution
U = Value was reported as below the method detection limit, therefore the detection limit is shown
J = Estimated value
I = Value is between method detection limit and practical quantitation limit
J3 = Estimated value; may not be accurate; spike or relative percent difference outside of criteria
Q = Sample analyzed beyond hold time; reported results are considered minimum values
POL = Paint and Oil Locker
SW3 = Supply Warehouse #3
LTM = Long-Term monitoring

FIGURE 4-1 MONITORING WELL CONSTRUCTION DETAILS

SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA

POL-SW3 LTM-PMR
Revision: 0
January 2024



NOTES:

ASTM - AMERICAN SOCIETY FOR TESTING AND MATERIALS

DIA - DIAMETER

M.W. - MONITORING WELL

PVC - POLYVINYL CHLORIDE

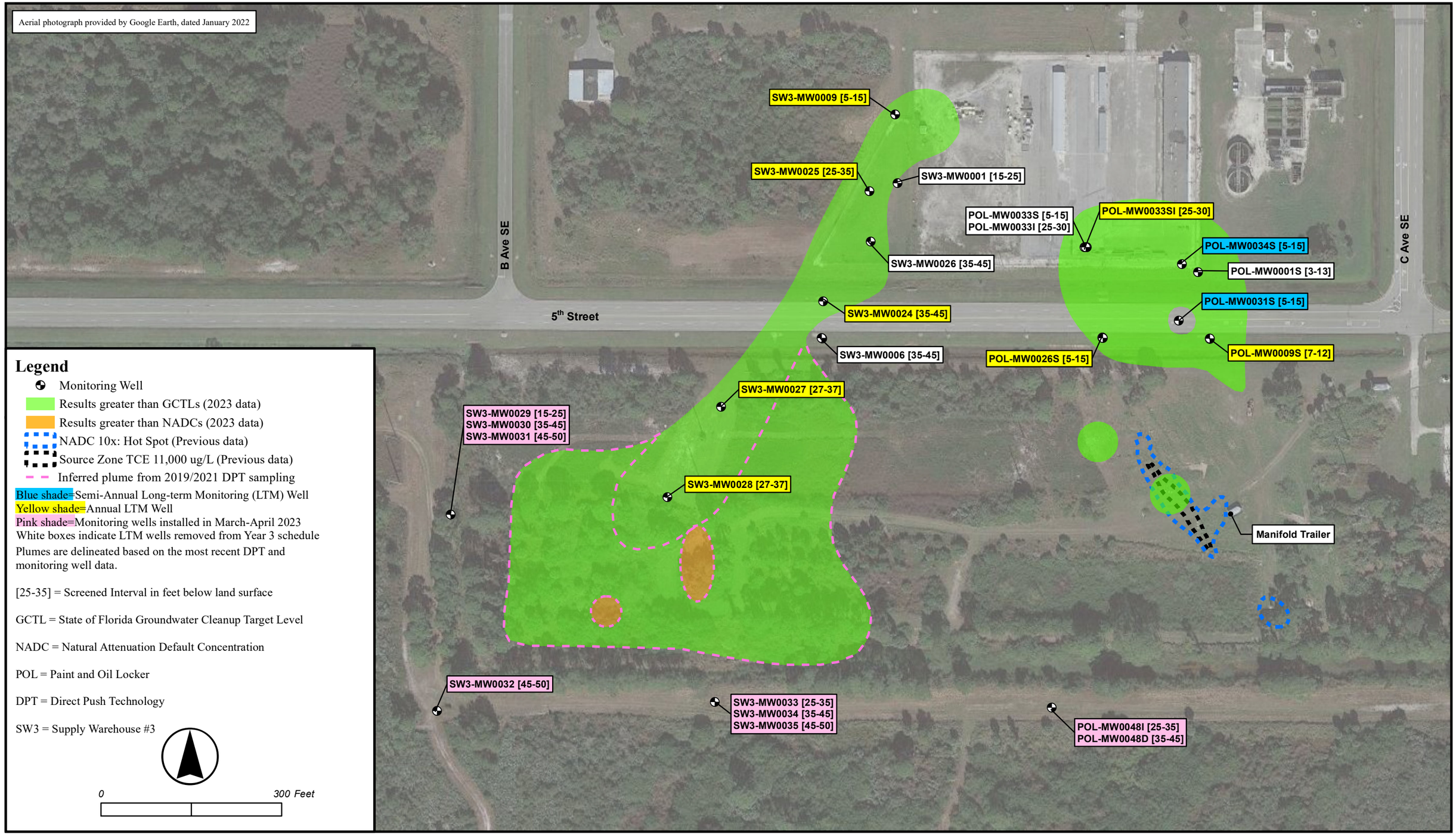
SCH 40 - SCHEDULE 40 (4MM THICKNESS)

POL - PAINT AND OIL LOCKER

SW3 - SUPPLY WAREHOUSE #3

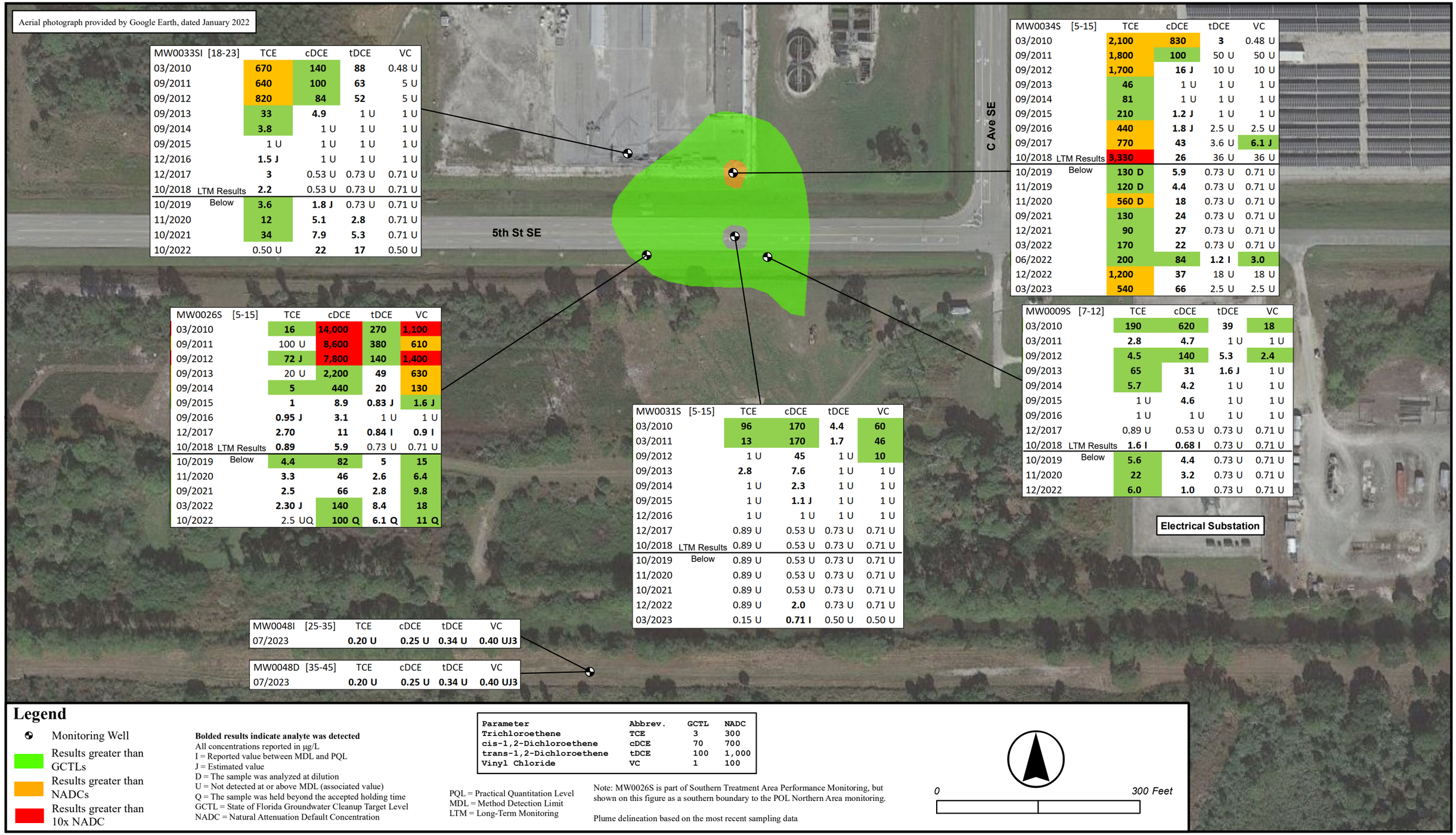
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FIGURE 4-2 YEAR 4 POL NORTHERN AREA AND SW3 LTM SAMPLE PLAN AND WELL LOCATIONS
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



JAX \\EGSS706GISFS1\EGS\JACKSONVILLE\GIS\PROJECTS\KSC\MXD\POL\4-2_POL_SW3_YEAR2_MW_SCHEDULE_LOCATION.MXD 12/21/23

FIGURE 4-3 POL LTM GROUNDWATER ANALYTICAL RESULTS
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



MW0033SI [18-23]	TCE	cDCE	tDCE	VC
03/2010	670	140	88	0.48 U
09/2011	640	100	63	5 U
09/2012	820	84	52	5 U
09/2013	33	4.9	1 U	1 U
09/2014	3.8	1 U	1 U	1 U
09/2015	1 U	1 U	1 U	1 U
12/2016	1.5 J	1 U	1 U	1 U
12/2017	3	0.53 U	0.73 U	0.71 U
10/2018 LTM Results	2.2	0.53 U	0.73 U	0.71 U
10/2019 Below	3.6	1.8 J	0.73 U	0.71 U
11/2020	12	5.1	2.8	0.71 U
10/2021	34	7.9	5.3	0.71 U
10/2022	0.50 U	22	17	0.50 U

MW0034S [5-15]	TCE	cDCE	tDCE	VC
03/2010	2,100	830	3	0.48 U
09/2011	1,800	100	50 U	50 U
09/2012	1,700	16 J	10 U	10 U
09/2013	46	1 U	1 U	1 U
09/2014	81	1 U	1 U	1 U
09/2015	210	1.2 J	1 U	1 U
09/2016	440	1.8 J	2.5 U	2.5 U
09/2017	770	43	3.6 U	6.1 J
10/2018 LTM Results	3,330	26	36 U	36 U
10/2019 Below	130 D	5.9	0.73 U	0.71 U
11/2019	120 D	4.4	0.73 U	0.71 U
11/2020	560 D	18	0.73 U	0.71 U
09/2021	130	24	0.73 U	0.71 U
12/2021	90	27	0.73 U	0.71 U
03/2022	170	22	0.73 U	0.71 U
06/2022	200	84	1.2 I	3.0
12/2022	1,200	37	18 U	18 U
03/2023	540	66	2.5 U	2.5 U

MW0026S [5-15]	TCE	cDCE	tDCE	VC
03/2010	16	14,000	270	1,100
09/2011	100 U	8,600	380	610
09/2012	72 J	7,800	140	1,400
09/2013	20 U	2,200	49	630
09/2014	5	440	20	130
09/2015	1	8.9	0.83 J	1.6 J
09/2016	0.95 J	3.1	1 U	1 U
12/2017	2.70	11	0.84 I	0.9 I
10/2018 LTM Results	0.89	5.9	0.73 U	0.71 U
10/2019 Below	4.4	82	5	15
11/2020	3.3	46	2.6	6.4
09/2021	2.5	66	2.8	9.8
03/2022	2.30 J	140	8.4	18
10/2022	2.5 UQ	100 Q	6.1 Q	11 Q

MW0009S [7-12]	TCE	cDCE	tDCE	VC
03/2010	190	620	39	18
03/2011	2.8	4.7	1 U	1 U
09/2012	4.5	140	5.3	2.4
09/2013	65	31	1.6 J	1 U
09/2014	5.7	4.2	1 U	1 U
09/2015	1 U	4.6	1 U	1 U
09/2016	1 U	1 U	1 U	1 U
12/2017	0.89 U	0.53 U	0.73 U	0.71 U
10/2018 LTM Results	1.6 I	0.68 I	0.73 U	0.71 U
10/2019 Below	5.6	4.4	0.73 U	0.71 U
11/2020	22	3.2	0.73 U	0.71 U
12/2022	6.0	1.0	0.73 U	0.71 U

MW0031S [5-15]	TCE	cDCE	tDCE	VC
03/2010	96	170	4.4	60
03/2011	13	170	1.7	46
09/2012	1 U	45	1 U	10
09/2013	2.8	7.6	1 U	1 U
09/2014	1 U	2.3	1 U	1 U
09/2015	1 U	1.1 J	1 U	1 U
12/2016	1 U	1 U	1 U	1 U
12/2017	0.89 U	0.53 U	0.73 U	0.71 U
10/2018 LTM Results	0.89 U	0.53 U	0.73 U	0.71 U
10/2019 Below	0.89 U	0.53 U	0.73 U	0.71 U
11/2020	0.89 U	0.53 U	0.73 U	0.71 U
10/2021	0.89 U	0.53 U	0.73 U	0.71 U
12/2022	0.89 U	2.0	0.73 U	0.71 U
03/2023	0.15 U	0.71 I	0.50 U	0.50 U

MW0048I [25-35]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 UJ3

MW0048D [35-45]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 UJ3

Legend

- Monitoring Well
- Results greater than GCTLs
- Results greater than NADCs
- Results greater than 10x NADC

Bolded results indicate analyte was detected
All concentrations reported in µg/L
I = Reported value between MDL and PQL
J = Estimated value
D = The sample was analyzed at dilution
U = Not detected at or above MDL (associated value)
Q = The sample was held beyond the accepted holding time
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration

Parameter	Abbrev.	GCTL	NADC
Trichloroethene	TCE	3	300
cis-1,2-Dichloroethene	cDCE	70	700
trans-1,2-Dichloroethene	tDCE	100	1,000
Vinyl Chloride	VC	1	100

PQL = Practical Quantitation Level
MDL = Method Detection Limit
LTM = Long-Term Monitoring

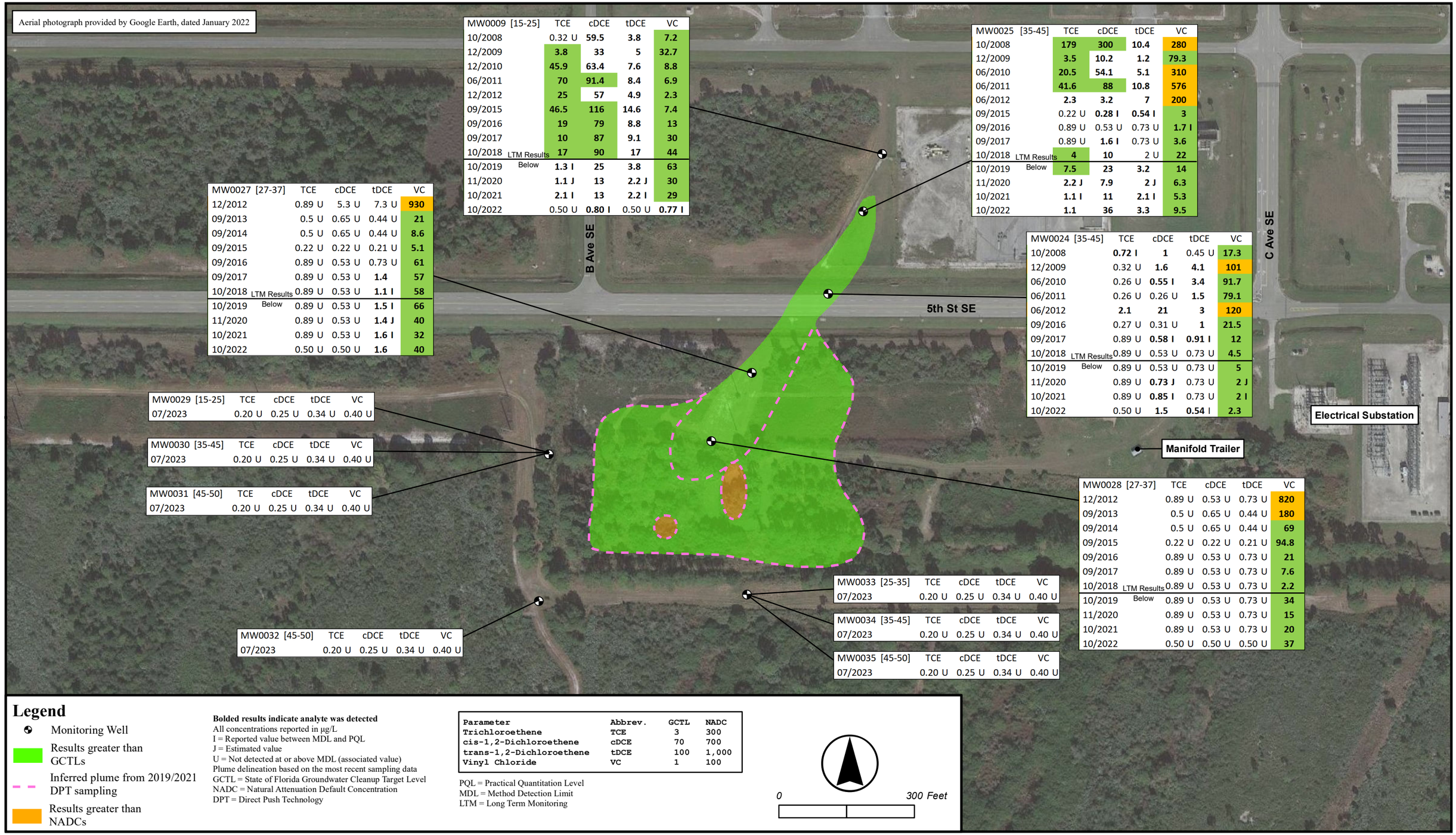
Note: MW0026S is part of Southern Treatment Area Performance Monitoring, but shown on this figure as a southern boundary to the POL Northern Area monitoring.

Plume delineation based on the most recent sampling data

0 300 Feet

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FIGURE 4-4 SW3 LTM GROUNDWATER ANALYTICAL RESULTS
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



MW0009 [15-25]	TCE	cDCE	tDCE	VC
10/2008	0.32 U	59.5	3.8	7.2
12/2009	3.8	33	5	32.7
12/2010	45.9	63.4	7.6	8.8
06/2011	70	91.4	8.4	6.9
12/2012	25	57	4.9	2.3
09/2015	46.5	116	14.6	7.4
09/2016	19	79	8.8	13
09/2017	10	87	9.1	30
10/2018 LTM Results	17	90	17	44
10/2019 Below	1.3 I	25	3.8	63
11/2020	1.1 J	13	2.2 J	30
10/2021	2.1 I	13	2.2 I	29
10/2022	0.50 U	0.80 I	0.50 U	0.77 I

MW0025 [35-45]	TCE	cDCE	tDCE	VC
10/2008	179	300	10.4	280
12/2009	3.5	10.2	1.2	79.3
06/2010	20.5	54.1	5.1	310
06/2011	41.6	88	10.8	576
06/2012	2.3	3.2	7	200
09/2015	0.22 U	0.28 I	0.54 I	3
09/2016	0.89 U	0.53 U	0.73 U	1.7 I
09/2017	0.89 U	1.6 I	0.73 U	3.6
10/2018 LTM Results	4	10	2 U	22
10/2019 Below	7.5	23	3.2	14
11/2020	2.2 J	7.9	2 J	6.3
10/2021	1.1 I	11	2.1 I	5.3
10/2022	1.1	36	3.3	9.5

MW0027 [27-37]	TCE	cDCE	tDCE	VC
12/2012	0.89 U	5.3 U	7.3 U	930
09/2013	0.5 U	0.65 U	0.44 U	21
09/2014	0.5 U	0.65 U	0.44 U	8.6
09/2015	0.22 U	0.22 U	0.21 U	5.1
09/2016	0.89 U	0.53 U	0.73 U	61
09/2017	0.89 U	0.53 U	1.4	57
10/2018 LTM Results	0.89 U	0.53 U	1.1 I	58
10/2019 Below	0.89 U	0.53 U	1.5 I	66
11/2020	0.89 U	0.53 U	1.4 J	40
10/2021	0.89 U	0.53 U	1.6 I	32
10/2022	0.50 U	0.50 U	1.6	40

MW0024 [35-45]	TCE	cDCE	tDCE	VC
10/2008	0.72 I	1	0.45 U	17.3
12/2009	0.32 U	1.6	4.1	101
06/2010	0.26 U	0.55 I	3.4	91.7
06/2011	0.26 U	0.26 U	1.5	79.1
06/2012	2.1	21	3	120
09/2016	0.27 U	0.31 U	1	21.5
09/2017	0.89 U	0.58 I	0.91 I	12
10/2018 LTM Results	0.89 U	0.53 U	0.73 U	4.5
10/2019 Below	0.89 U	0.53 U	0.73 U	5
11/2020	0.89 U	0.73 J	0.73 U	2 J
10/2021	0.89 U	0.85 I	0.73 U	2 I
10/2022	0.50 U	1.5	0.54 I	2.3

MW0029 [15-25]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0030 [35-45]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0031 [45-50]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0032 [45-50]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0033 [25-35]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0034 [35-45]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0035 [45-50]	TCE	cDCE	tDCE	VC
07/2023	0.20 U	0.25 U	0.34 U	0.40 U

MW0028 [27-37]	TCE	cDCE	tDCE	VC
12/2012	0.89 U	0.53 U	0.73 U	820
09/2013	0.5 U	0.65 U	0.44 U	180
09/2014	0.5 U	0.65 U	0.44 U	69
09/2015	0.22 U	0.22 U	0.21 U	94.8
09/2016	0.89 U	0.53 U	0.73 U	21
09/2017	0.89 U	0.53 U	0.73 U	7.6
10/2018 LTM Results	0.89 U	0.53 U	0.73 U	2.2
10/2019 Below	0.89 U	0.53 U	0.73 U	34
11/2020	0.89 U	0.53 U	0.73 U	15
10/2021	0.89 U	0.53 U	0.73 U	20
10/2022	0.50 U	0.50 U	0.50 U	37

Legend

- Monitoring Well
- Results greater than GCTLs
- Inferred plume from 2019/2021 DPT sampling
- Results greater than NADCs

Bolded results indicate analyte was detected
All concentrations reported in µg/L
I = Reported value between MDL and PQL
J = Estimated value
U = Not detected at or above MDL (associated value)
Plume delineation based on the most recent sampling data
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
DPT = Direct Push Technology

Parameter	Abbrev.	GCTL	NADC
Trichloroethene	TCE	3	300
cis-1,2-Dichloroethene	cDCE	70	700
trans-1,2-Dichloroethene	tDCE	100	1,000
Vinyl Chloride	VC	1	100

PQL = Practical Quantitation Level
MDL = Method Detection Limit
LTM = Long Term Monitoring

0 300 Feet

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SECTION V
CONCLUSIONS AND RECOMMENDATIONS

5.1 CONCLUSIONS

Year 2 PM sampling activities were conducted annually at six monitoring wells and semi-annually at 15 monitoring wells, in accordance with the Year 2 Sampling Plan. Ambient air sampling was also conducted on January 9, 2023, to assess breathing zone conditions in the area of AS operations while the system was running. This assessment was conducted to monitor health and safety conditions, as well as to confirm compliance with the KSC Title V Air Operation Permit.

Based on Year 2 system operation and PM results, the AS system at POL operated as designed and successfully met the performance objective of reducing VOCs to concentrations that support transition of the site from active remediation to LTM. The majority of active AS wells operated at the design flowrate of 5 cfm and the design pressure at the manifold trailer for each operating zone was met; 19.5 psi (shallow), 26.7 psi (shallow-intermediate), 32.2 psi (intermediate), and 38.4 psi (deep). The overall runtime of the AS system was 83 percent and was calculated over the period the AS system was operational in Year 2 (September 2022 – June 2023) since the AS system was shut off and removed in June 2023. System downtime was attributed primarily to groundwater sampling activities, hurricanes, and system maintenance.

The results from the samples collected from PM wells within the AS system ROI showed a significant decrease in COC concentrations since the baseline sampling event conducted in April 2020. In the Shallow Zone, only cDCE and VC exceeded their respective GCTLs in monitoring well MW0026S. In the Intermediate Zone, TCE exceeded the GCTL in three monitoring wells (MW0041SI, MW0042I, and MW0043I). Concentrations of cDCE, tDCE, and VC were below the GCTLs in the Intermediate Zone. In the Deep Zone, all COC results were either non-detect or were detected at concentrations less than their respective GCTLs. Based on the Year 2 OM&M and PM results obtained from the POL Southern Treatment Area, the IM objective to reduce concentrations to below the LTM transition target concentrations for TCE, cDCE, tDCE, and VC has been achieved.

Nine new monitoring wells were installed between March 23 and April 4, 2023 as requested by FDEP to monitor potential downgradient LCP migration in the southern portion of SW3 and adjacent POL southern area. These nine new wells were first sampled in July 2023 as part of the LTM sampling program. Results from these wells were all non-detect.

LTM sampling events at SW3 were conducted in October 2022 and July 2023. LTM sampling was conducted at the POL Northern Area in October 2022, December 2022, March 2023, and July 2023. Analytical results from October 2022 and July 2023 generally indicate that concentrations of COCs have been stable or decreasing compared to the previous year. TCE remains greater than the NADC in one monitoring well (POL-MW0034S) and greater than the GCTL in one monitoring well (POL-MW0009S). Concentrations of cDCE were greater than the GCTL in one monitoring well (POL-MW0026S), and tDCE was non-detect or less than the GCTL in all monitoring wells sampled. VC was greater than the GCTL in four monitoring wells (MW0024, MW0025, MW0027, and MW0028) at SW3 and one monitoring well (MW0026S) at the POL Northern Area.

5.2 RECOMMENDATIONS

The contents of this report were previously presented during the October 2023 KSCRT meeting. During the October 2023 KSCRT meeting, Team consensus was reached that the IM objective was met, and the POL Southern Treatment Area should be transitioned from PM to LTM beginning in Year 3[7] until the site's overall objective of attaining GCTLs for the COCs is reached. The October ADP and Meeting Minutes are included in Appendix F. The following recommendations were presented and received concurrence during the October 2023 KSCRT meeting:

- Prepare the POL Southern Treatment Area Year 2 Performance Monitoring Report and POL Northern Area and SW3 LTM Report for NASA's submittal to FDEP (Meeting Minute 2310-M16, Decision D49).

[7] POL Southern Treatment Area will transition to LTM in conjunction with the POL Northern Area and SW3 as part of the 5th Year of LTM within these two sites.

- Transition the following 15 monitoring wells in the POL Southern Treatment Area to annual-LTM sampling (October 2023 to be sampled in conjunction with POL Northern Area and SW3): POL-MW0012S, POL-MW0016S, POL-MW0017S, POL-MW0026S, POL-MW0045S, POL-MW0022I, POL-MW0036SI, POL-MW0041SI, POL-MW0042SI, POL-MW0043I, POL-MW0045I, POL-MW0022D, POL-MW0039ID, POL-MW0043D, and POL-MW0044D (Meeting Minute 2310-M16, Decision D50).

- Continue to sample the following LTM wells at SW3 and POL Northern area on an annual basis in October 2023 to maintain a uniform sampling cycle: SW3-MW0009, SW3-MW0024, SW3-MW0025, SW3-MW0027, SW3-MW0028, SW3-MW0029, SW3-MW0030, SW3-MW0031, SW3-MW0032, SW3-MW0033, SW3-MW0034, SW3-MW0035, POL-MW0009S, POL-MW0026S, POL-MW0033SI, POL-MW0034S, POL-MW0048I, and POL-MW0048D (Meeting Minute 2310-M16, Decision D51).

- Prepare an LTM Report capturing LTM recommendations for NASA's Submittal to FDEP (Meeting Minute 2310-M16, Decision D52).

Table 5-1 provides the Year 3 recommendations. The well locations and sampling frequency for Year 3 are provided on Figure 5-1. During sampling events, water level measurements will be taken at each well sampled and additional wells to produce sitewide groundwater contours. Additional wells recommended for water level measurements are also shown on Figure 5-1.

Per- and polyfluorinated alkyl substances associated with Sewage Treatment Plant 1 (SWMU 117) and its sludge disposal area are present in the vicinity of POL and SW3. Assessment results will be reported under SWMU 117.

Table 5-1 Year 3 POL and SW3 LTM Groundwater Monitoring Schedule

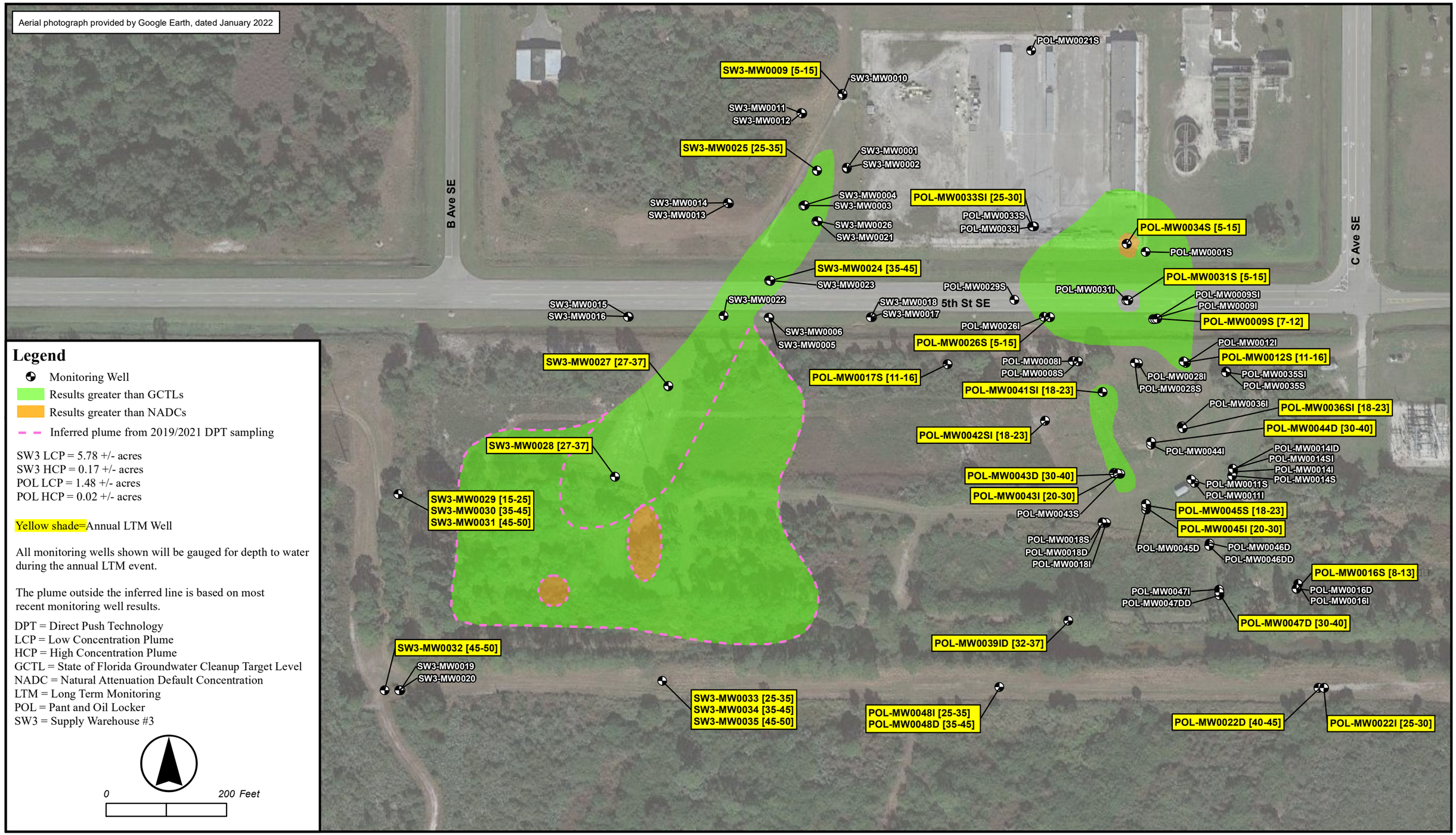
Depth Interval	Monitoring Well Name	LTM Sampling Frequency	LTM Rationale
Paint and Oil Locker Southern Area			
Shallow	POL-MW0012S	Annually	Highest VC detection > GCTL in Year 2. Former eastern upgradient monitoring location.
	POL-MW0016S	Annually	Southeastern sidegradient monitoring location.
	POL-MW0017S	Annually	Western side gradient monitoring location. Monitor barrier relationship with SW3 Plume.
	POL-MW0026S	Annually	Highest cDCE detection > GCTL in Year 2, VC > GCTL. Monitor barrier relationship with POL north plume.
	POL-MW0036SI	Annually	Eastern side-gradient monitoring location. Former estern side gradient monitoring location in HCP
	POL-MW0041SI	Annually	TCE > GCTL in July 2023. Former central upgradient monitoring location in HCP
	POL-MW0042SI	Annually	TCE > GCTL throughout Year 1 and Year 2.
	POL-MW0045S	Annually	Downgradient monitoring location in former SZ . Retained to monitor potential rebound.
Intermediate	POL-MW0022I	Annually	Eastern downgradient monitoring location.
	POL-MW0039ID	Annually	Southwestern side-gradient monitoring location.
	POL-MW0043I	Annually	TCE > GCTL throughout Year 1 and Year 2 operations. Upgradient monitoring location in former SZ.
	POL-MW0045I	Annually	Downgradient monitoring location in former SZ. Monitor potential rebound.
	POL-MW0048I	Annually	Downgradient of LCP. Located to monitor offsite plume migration, if any.
Deep	POL-MW0022D	Annually	Eastern downgradient monitoring location.
	POL-MW0043D	Annually	Upgradient monitoring well in former SZ. Retained to monitor potential rebound.
	POL-MW0044D	Annually	Highest detections in deep interval during Year 2 . Former eastern monitoring location within the HCP.
	POL-MW0047D	Annually	Central downgradient monitoring well in former HS. Also monitor potential rebound.
	POL-MW0048D	Anually	Downgradient of LCP. Located to monitor offsite plume migration, if any.
Paint and Oil Locker Northern Area			
Shallow	POL-MW0009S	Annually	Eastern downgradient monitoring location. Monitor barrier relationship with POL south plume.
	POL-MW0026S	Annually	Western downgradient monitoring location. Monitor barrier relationship with POL south plume. TCE and VC > GCTL in May 2018.
	POL-MW0031S	Annually	Downgradient of MW0034S.
	POL-MW0033SI	Annually	TCE > GCTL in May 2018.
	POL-MW0034S	Annually	TCE > 10XNADC in October 2018. TCE > NADC in March 2023
Supply Warehouse #3			
Shallow	SW3-MW0009	Annually	Upgradient of LCP.
	SW3-MW0029	Annually	Southeastern side gradient monitoring location.
Deep	SW3-MW0024	Annually	Along centerline of former remedial zone.
	SW3-MW0025	Annually	Western edge of former remedial zone.
	SW3-MW0027	Annually	Along centerline of former remedial zone.
	SW3-MW0028	Annually	Downgradient of former HCP.
	SW3-MW0030	Annually	Southwestern side gradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.
	SW3-MW0033	Annually	Central downgradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.
	SW3-MW0034	Annually	Central downgradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.
	SW3-MW0031	Annually	Southwestern side gradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.
	SW3-MW0032	Annually	Western downgradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.
	SW3-MW0035	Annually	Central downgradient monitoring location. Monitor LCP plume boundary conditions based off the Oct/Nov 2021 DPT event.

Notes:

POL-MW0026S will be sampled on the same schedule. Since it was sampled as an LTM well and a perfomance monitoring well, it is shown twice

GCTL = Groundwater Cleanup Target Level
HCP = High Concentration Plume
LCP = Low Concentration Plume
SZ = Source Zone
HS = Hot Spot
NADC = Natural Attenuation Default Concentration
TCE = Trichloroethene
cDCE = cis-1,2-Dichloroethene
POL = Paint and Oil Locker
SW3 = Supply Warehouse #3
LTM = Long-Term Monitoring
> = Analyte result greater than the GCTL
DPT = Direct push technology
COCs = Contaminents of Concern
VC = Vinyl Chloride

FIGURE 5-1 POL SOUTHERN AREA, POL NORTHERN AREA, AND SW3 PROPOSED YEAR 3 MW NETWORK
SWMU 067 AND SWMU 088, KENNEDY SPACE CENTER, FLORIDA



Legend

- Monitoring Well
- Results greater than GCTLs
- Results greater than NADCs
- Inferred plume from 2019/2021 DPT sampling

SW3 LCP = 5.78 +/- acres
SW3 HCP = 0.17 +/- acres
POL LCP = 1.48 +/- acres
POL HCP = 0.02 +/- acres

Yellow shade=Annual LTM Well

All monitoring wells shown will be gauged for depth to water during the annual LTM event.

The plume outside the inferred line is based on most recent monitoring well results.

DPT = Direct Push Technology
LCP = Low Concentration Plume
HCP = High Concentration Plume
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
LTM = Long Term Monitoring
POL = Pant and Oil Locker
SW3 = Supply Warehouse #3

0 200 Feet

JAX C:\GIS\KSC\MXD\POL\5-1_POL_SW3_YEAR3_MW_SCHEDULE_PLUMES_2023_V3.MXD 12/26/23

SECTION VI
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APPENDIX A

MONTHLY O&M BALANCING FORMS

Airsparge Well Readings								Sep-22	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Oct-22	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Nov-22	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Dec-22	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Jan-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Feb-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Mar-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Apr-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								May-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings								Jun-23	
WELL READINGS								Time of readings varies	Zone Run Time hours aday
Zone (color/#): Zone Tan (1)				Manifold #1 55 cfm @ 20 psi					
								NOTES	
Wells	Time First Adj.	scfm	psi		Time Last Adj.	scfm	psi		
11		0	0			0	0	Zone 1 was shut off.	
7		0	0			0	0		
4		0	0			0	0		
8		0	0			0	0		
1		0	0			0	0		
10		0	0			0	0		
9		0	0			0	0		
6		0	0			0	0		
5		0	0			0	0		
3		0	0			0	0		
2		0	0			0	0		

Airsparge Well Readings — Sep-22

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Oct-22

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Nov-22

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Dec-22

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Jan-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Feb-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Mar-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Apr-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — May-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Jun-23

WELL READINGS

Zone (color/#): Zone Green (2) — Manifold #2 110 cfm @ 25 psi

Time of readings varies — Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi	NOTES
19		0	0		0	0	Zone 2 was shut off.
36		0	0		0	0	
18		0	0		0	0	
35		0	0		0	0	
25		0	0		0	0	
20		0	0		0	0	
15		0	0		0	0	
32		0	0		0	0	
12		0	0		0	0	
28		0	0		0	0	
21		0	0		0	0	
27		0	0		0	0	
26		0	0		0	0	
17		0	0		0	0	
34		0	0		0	0	
16		0	0		0	0	
33		0	0		0	0	
23		0	0		0	0	
14		0	0		0	0	
20		0	0		0	0	
13		0	0		0	0	
22		0	0		0	0	

Airsparge Well Readings — Sep-22

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		3	32
69		0	32		3	32
68		0	32		3	32
66		0	32		3	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		BDL	29		BDL	29
59		2.25	0		2.25	0
70		1	33		3	33
76		BDL	32		BDL	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings — Oct-22

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		3	32
69		0	32		3	32
68		0	32		3	32
66		0	32		3	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		BDL	29		BDL	29
59		2.25	0		2.25	0
70		1	33		3	33
76		BDL	32		BDL	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Nov-22

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		3	32
69		0	32		3	32
68		0	32		3	32
66		0	32		3	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		BDL	29		BDL	29
59		2.25	0		2.25	0
70		1	33		3	33
76		BDL	32		BDL	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings — Dec-22

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings — Jan-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Feb-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings — Mar-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings — Apr-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — May-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Jun-23

WELL READINGS — Zone (color/#): Zone red (3) — Manifold #3 11.0 cfm @ 33.0 psi

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
30		Off	0		Off	0
31		Off	0		Off	0
29		Off	0		Off	0
77		3	33		3	33
47		Off	0		Off	0
49		Off	0		Off	0
52		Off	0		Off	0
65		0	34		0	32
69		0	32		0	32
68		0	32		0	32
66		0	32		0	32
73		3	33		3	33
67		3	32		3	32
39		Off	0		Off	0
38		Off	0		Off	0
40		Off	0		Off	0
48		Off	0		Off	0
50		Off	0		Off	0
58		2	29		2	29
59		2.25	0		2.25	0
70		2	33		2	33
76		2	32		2	32

NOTES

- readings at –3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Sep-22

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		BDL	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Oct-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		BDL	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Nov-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		BDL	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Dec-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		BDL	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Jan-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Feb-23

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Mar-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Apr-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

May-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Blue (4) | Manifold #4 40.0 cfm @ 27.0 psi

Jun-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
45		Off	0		Off	0
44		Off	0		Off	0
42		Off	0		Off	0
43		Off	0		Off	0
41		Off	0		Off	0
60		BDL	27		3	27
61		3	17		3	17
62		2.75	17		3	17
64		2.5	16		3	16
52		Off	6		Off	6
37		Off	0		Off	0
55		Off	0		Off	0
54		Off	0		Off	0
71		BDL	28		3	28
51		Off	0		Off	0
63		3.5	16		3	15
72		2.75	16		3	16
53		Off	0		Off	0
73		3	16		3	16
56		3	16		3	16
46		Off	0		Off	0
78		2	0		3	27

NOTES

- readings at ~3 scfm

=G82- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Sep-22

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Oct-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Nov-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Dec-22

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Jan-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Feb-23

Time of readings varies | Zone Run Time hours a day

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Mar-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Apr-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

May-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

WELL READINGS

Zone (color/#): Zone Black (5) | Manifold #5 110 cfm @ 22 psi

Jun-23

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
79		3	20		3	20
123		3	20		3	20
135		3	20		3	20
124		3	20		3	20
104		3	20		3	20
114		3	20		3	20
98		3	20		3	20
103		3	20		3	20
96		3	20		3	20
88		3	20		3	20
87		3	20		3	20
134		3	20		3	20
145		3	20		3	20
112		3	20		3	20
113		3	20		3	20
125		3	20		3	20
105		3	20		3	20
97		3	20		3	20
89		3	20		3	20
81		3	20		3	20
80		3	20		3	20
74		3	20		3	20

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

Airsparge Well Readings — Sep-22

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings — Oct-22

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Nov-22

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings — Dec-22

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings — Jan-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Feb-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings — Mar-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings — Apr-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — May-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Jun-23

WELL READINGS

Zone (color/#): Zone Yellow (6) | Manifold #6 80 cfm @ 30 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
83		3	25		3	25
143		3	25		3	25
144		3	25		3	25
111		3	25		3	25
102		3	25		3	25
91		3	25		3	25
94		3	25		3	25
92		3	25		3	25
85		3	25		3	25
82		3	25		3	25
133		3	25		3	25
122		3	25		3	25
84		3	25		3	25
90		3	25		3	25
93		3	25		3	25
95		3	25		3	25
86		3	25		3	25

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

Airsparge Well Readings

Sep-22

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings

Oct-22

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

Nov-22

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings

Dec-22

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings

Jan-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

Feb-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings

Mar-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings

Apr-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings

May-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

Airsparge Well Readings

Jun-23

WELL READINGS

Zone (color/#): Zone brown (7) | Manifold #7 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
110		3	28		3	28
116		3	28		3	28
118		3	28		3	28
109		3	28		3	28
107		3	28		3	28
108		3	28		3	28
101		3	28		3	28
115		3	28		3	28
117		3	28		3	28
114		3	28		3	28
120		3	28		3	28
106		3	28		3	28
99		3	28		3	28
100		3	28		3	28

NOTES

- readings at ~3 scfm

- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Airsparge Well Readings — Sep-22

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 3 days due to Hurricane Ian.

Airsparge Well Readings — Oct-22

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Nov-22

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Powered down for 6 days due to Hurricane Nicole.

Airsparge Well Readings — Dec-22

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

Shutdown for 14.5 days for performance sampling.

Airsparge Well Readings — Jan-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Feb-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 18 days due to an unknown eletrical fault.

Airsparge Well Readings — Mar-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 9.5 days for compressor maintenance

Airsparge Well Readings — Apr-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — May-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

No downtime occurred.

Airsparge Well Readings — Jun-23

WELL READINGS — Zone (color/#): Zone purple (8) — Manifold #8 70 cfm @ 35 psi

Time of readings varies | Zone Run Time hours aday

Wells	Time First Adj.	scfm	psi	Time Last Adj.	scfm	psi
142		3	28		3	28
132		3	28		3	28
136		3	28		3	28
140		3	28		3	28
138		3	28		3	28
129		3	28		3	28
130		3	28		3	28
121		3	28		3	28
141		3	28		3	28
126		3	28		3	28
127		3	28		3	28
137		3	28		3	28
128		3	28		3	28
139		3	28		3	28
131		3	28		3	28

NOTES

- readings at ~3 scfm
- adjusted down/up to 3 scfm

PID reading 0.0 ppm

System down for 1.4 days for 4k compressor maintenance and moved from POL to Pad B.

APPENDIX B

SAMPLING FIELD NOTES AND LOG SHEETS

10/12/2022 **POL** **112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Natalie Fabbri	(NF)	Env. Sci.	Tt

Weather: Partly Cloudy 75 degrees F

Health and Safety (HAS): Topics: SSHASP; PPE; IDW

PPE: Level D

Objective: Begin POL and SW3 202210 Groundwater (GW) LTM Sampling Event

0720: CS/NF Depart from Office to KSC; gathering Equipment and supplies; HAS meeting; daily prep
0800: GPS CHP locations
0900: Arrived at POL begin locating/equilibrating wells for water levels
1000: Equilibration complete
1130: Begin collecting water levels
1230: Water levels completed
1235: NF Purging POL-MW0014ID
1315: Purging Complete
1320: Sample Collected POL-MW0014ID-034.5-20221012 8260DTCL
1330: NF Purging POL-MW0035SI
1355: Purging Complete
1400: Sample Collected POL-MW0035SI-020.5-20221012 8260DTCL
1420: NF Purging POL-MW0012S
1445: Purging Complete
1450: Sample Completed POL-MW0012S-013.5-20221012 8260DTCL
1500: Site Secured/ Tt Offsite

10/13/2022 **POL** **112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Natalie Fabbri	(NF)	Env. Sci.	Tt

Weather: Partly Cloudy 75 degrees F
Health and Safety (HAS): Topics: SSHASP; PPE; IDW
PPE: Level D
Objective: Begin POL and SW3 202210 Groundwater (GW) LTM Sampling Event

0720: CS/NF arrive at POL site at KSC; gathering Equipment and supplies; HAS meeting; daily prep
0820: Begin groundwater sampling
0845: NF purging POL-MW0028S
0855: Purged well dry
0900: pausing purge; allowing well to recharge
0935: NF purging POL-MW0028I as MW0028S is recharging
1015: Purging Complete
1020: Sample Collected POL-MW0028I-027.5-20221013 8260DTCL
1040: Purging Resumed POL-MW0028I
1042: Purging Complete
1045: Sample Collected POL-MS0028S-011.9-2O221013 8260DTCL
1120: NF Purging POL-MW0026I
1145: Purging Complete
1150: Sample Collected POL-MW0026I-027.5-20221013 8260DTCL
1200: NF Purging POL-MW0026S
1215: Pausing purge; allowing well to recharge
1245: Purging Continued
1248: Purging Complete
1250: Sample Collected POL-MW0026S-013.6-20221013 8260DTCL
1305: NF Purging POL-MW0034S
1325: Purging Complete
1330: Sample Collected POL-MW0034S-010.0-20221013 8260DTCL
1350: CS Purging POL-MW0033SI
1410: Purging Complete
1415: Sample Collected POL-MW0033SI-020.5-20221013 8260DTCL

- NOTE: POL-MW0034S was sampled, but not required. Sample was pulled from sample cooler and removed from COCs

1425: CS Purging SW3-MW0009
1445: Purging Complete
1450: Sample Collected SW3-MW0009-020.0-20221013 8260DTCL

Calibration Report

Instrument	Aqua TROLL 600 Vented
Serial Number	840822
Created	10/12/2022

[redacted]

Serial Number	742651
Last Calibrated	10/12/2022

Calibration Details

Calibration Point 1

pH of Buffer	4.00 pH
pH mV	155.6 mV
Temperature	27.48 °C

Pre Measurement

pH	3.90 pH
pH mV	155.6 mV

Post Measurement

pH	4.00 pH
pH mV	156.9 mV

Calibration Point 2

pH of Buffer	7.00 pH
pH mV	-2.5 mV
Temperature	26.79 °C

Pre Measurement

pH	6.85 pH
pH mV	-2.1 mV

Post Measurement

pH	7.00 pH
pH mV	-2.5 mV

Calibration Point 3

pH of Buffer	10.00 pH
pH mV	-155.2 mV
Temperature	27.20 °C

Pre Measurement

pH	9.92 pH
pH mV	-155.9 mV

Post Measurement

pH	10.00 pH
pH mV	-156.4 mV

Slope and Offset 1

Slope	-52.72 mV/pH
Offset	-2.5 mV

Slope and Offset 2

Slope	-50.9 mV/pH
Offset	-2.5 mV

ORP

ORP Solution	Zobell's
Offset	20.1 mV
Temperature	28.83 °C
Pre Measurement	210.2 mV
Post Measurement	224.1 mV

[redacted]

Serial Number	839497
Last Calibrated	10/12/2022

Calibration Details

Slope	1.135585
Offset	0.00 mg/L

Calibration point 100%

Concentration	7.06 mg/L
Pre Measurement	99.14 %Sat
Post Measurement	100.00 %Sat
Temperature	27.03 °C
Barometric Pressure	1,020.3 mbar

[redacted]

Serial Number	836715
Last Calibrated	10/12/2022

Calibration Details

TDS Conversion Factor (ppm)	0.65
Cell Constant	1.155
Reference Temperature	25.00 °C

Pre Measurement

Actual Conductivity	1,446.9 µS/cm
Specific Conductivity	1,407.0 µS/cm

Post Measurement

Actual Conductivity	1,453.1 µS/cm
Specific Conductivity	1,413.0 µS/cm

[redacted]

Serial Number	844541
Last Calibrated	10/3/2022

Calibration Details

Slope	1
Offset	-7.06 NTU

Calibration Point 1

Pre Measurement	0.00 NTU
Post Measurement	0.00 NTU

[redacted]

Serial Number	840822
Last Calibrated	Factory Defaults

[redacted]

Serial Number	825947
Last Calibrated	Factory Defaults

Tetra Tech EGS, Inc.

Project Name: POL/SW3 **Project No.:** 112G09020/

Location: Kennedy Space Center (KSC), Florida **Personnel:** C. Sorden/N. Fabbri

Weather Conditions: Cloudy 81°F **Measuring Device:** Heron Skinny Dipper

Tidally Influenced: Yes **Remarks:**

Well or Piezometer (-)	Date	Time	Screened Interval (feet)*	Water Level Indicator Reading (feet)*	Thickness of Free Product (feet)*	Groundwater Elevation (feet)*	Comments
SW3-MW0009	10/12/2022	1200	15-25	5.03			
SW3-MW0024	10/12/2022	1146	35-45	2.99			
SW3-MW0025	10/12/2022	1202	35-45	7.58			
SW3-MW0027	10/12/2022	1141	27-37	7.46			
SW3-MW0028	10/12/2022	1138	27-37	7.39			
POL-MW0012S	10/12/2022	1125	11-16	3.21			
POL-MW0014ID	10/12/2022	1135	32-37	2.47			
POL-MW0026S	10/12/2022	1150	5-15	3.65			
POL-MW0026I	10/12/2022	1149	25-30	3.04			
POL-MW0028S	10/12/2022	1131	7-17	5.35			
POL-MW0028I	10/12/2022	1130	27-32	4.43			
POL-MW0033SI	10/12/2022	1210	18-23	3.18			
POL-MW0034S	10/12/2022	1207	5-15	3.90			
POL-MW0035SI	10/12/2022	1121	18-23	2.76			

* All measurements to the nearest 0.01 foot

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0012S**	SAMPLE ID: **POL-MW0012S-013.5-20221012** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/12/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.21	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **11 to 16**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **11**	BOTTOM DEPTH (feet bls): **16**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

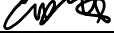
0.61 Liters. 0.005 + (0.005 x 25) + 0.475 = 0.61

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	PURGING INITIATED AT: 1420	PURGING ENDED AT: 1445	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1430	2.0	2.0	200	4.84	5.73	27.90	780.64	0.09	20.4	-16.1	Orange
1435	1.0	3.0	200	4.84	5.52	28.13	665.49	0.03	11.4	1.8	Clear
1440	1.0	4.0	200	4.84	5.47	28.00	614.87	0.03	8.35	9.0	Clear
1445	1.0	5.0	200	4.84	5.42	28.17	607.40	0.03	-	13.5	Clear
1450	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1450	SAMPLING ENDED AT: 1455
PUMP OR TUBING DEPTH IN WELL (feet): 13.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
12S	3	CG	40 mL	HCL/4°C	N/A	See Above	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS: After sample sump purge Black to clear & total depth check 18.55 ft from torc/toc

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0014ID**	SAMPLE ID: **POL-MW0014ID-034.5-20221012** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/12/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.4	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **32 to 37**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **32**	BOTTOM DEPTH (feet bls): **37**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.71 Liters. (0.005 x 47) + 0.475 = 0.71

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING INITIATED AT: 1235	PURGING ENDED AT: 1310	TOTAL VOLUME PURGED (Liters): 8.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1245	2.0	2.0	200	2.98	6.35	26.84	1143.5	0.02	26.5	-16.7	Murky
1255	2.0	4.0	200	2.98	6.41	26.70	1084.2	0.02	11.2	-19.6	Clear
1300	1.0	5.0	200	2.98	6.36	26.64	1168.7	0.01	10.1	-16.1	Clear
1305	1.0	6.0	200	2.98	6.38	26.45	1163.5	0.01	10.73	-18.3	Clear
1310	1.0	7.0	200	2.98	6.44	26.23	1170.0	0.01	4.3	-20.8	Clear
1315	1.0	8.0	200	2.98	6.39	26.30	1147.3	0.01	3.12	-19.1	Clear
1320	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1320	SAMPLING ENDED AT: 1325
PUMP OR TUBING DEPTH IN WELL (feet): 34.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCL/4°C	N/A	See Above	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026I**	SAMPLE ID: **POL-MW0026I-027.5-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **/10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.12	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1120	PURGING ENDED AT: 1145	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1130	2.0	2.0	200	306	6.65	28.90	1060.5	0.06	16.17	-80.9	Clear
1135	1.0	3.0	200	3.06	6.59	28.71	1038.1	0.04	18.67	-84.4	Clear
1140	1.0	4.0	200	3.06	6.54	28.64	1033.2	0.03	10.26	-84.7	Clear
1145	1.0	5.0	200	3.06	6.51	28.53	1036.8	0.03	-	-82.8	Clear
1150	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES: NLF	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1155
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL/4°C	N/A	See Above	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026S**	SAMPLE ID: **POL-MW0026S-013.6-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.16	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**

WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **5**	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.58 Liters. (0.005 x 25) + 0.475 = 0.58

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.6	PURGING INITIATED AT: 1200	PURGING ENDED AT: 1248	TOTAL VOLUME PURGED (Liters): 1.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1210	1.0	1.0	100		4.75	29.06	843.40	0.19	97.70	119.5	Brown
1220	0.5	1.5	100	Purged	Dry						
1245	Purging	Continued									
1248	0.3	1.8	100	12.26	4.56	30.19	874.90	0.49	36.12	126.5	Brown
1250	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbr/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT:1250	SAMPLING ENDED AT: 1255
PUMP OR TUBING DEPTH IN WELL (feet): 13.6	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL/4°C	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

Well purged dry

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0028I**	SAMPLE ID: **POL-MW0028I-027.5-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.94	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 0935	PURGING ENDED AT: 1015	TOTAL VOLUME PURGED (Liters): 8.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0945	2.0	2.0	200	4.93	6.41	27.59	1264.2	0.10	15.27	-55.3	Clear
0950	1.0	3.0	200	4.93	6.45	27.09	1246.9	0.07	5.08	-56.3	Clear
1000	2.0	5.0	200	4.93	6.43	27.54	1277.1	0.06	3.92	-58.3	Clear
1005	1.0	6.0	200	4.93	6.40	27.84	1293.3	0.06	2.42	-57.8	Clear
1010	1.0	7.0	200	4.93	6.46	27.77	1290.9	0.06	1.69	-62.2	Clear
1015	1.0	8.0	200	4.93	6.41	27.82	1282.9	0.05	0.98	-60.6	Clear
1020	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Slegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1020	SAMPLING ENDED AT: 1020
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL/4°C	N/A	See Above	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0028S**	SAMPLE ID: **POL-MW0028S-012.0-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.31	CASING HEIGHT (feet als): 0.13	STATIC DEPTH TO WATER (feet bls) = (btoc) - Casing Height (feet als): 7.44	WELL SCREEN INTERVAL DEPTH (feet bls): **7 to 17**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 7.44	BOTTOM DEPTH (feet bls): **17**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

0.57 Liters (15 – 7.44) x 0.076

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.56 Liters. (0.005 x 17) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 11.2	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0845	PURGING ENDED AT: 1042	TOTAL VOLUME PURGED (Liters): 1045

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0855	0.5	0.5	100	Well	Purged	Dry					
1040	Purging	Resumed									
1042	0.2	0.7	100	8.74	3.25	32.16	3218.4	2.98	26.68	262.3	Clear
1045	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1045	SAMPLING ENDED AT: 1050
PUMP OR TUBING DEPTH IN WELL (feet): 11.9	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCL/4°C	N/A	See above	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:
Well purged dry; waited for well to recharge. Followed FDEP SOP guidelines and resumed sampling.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **MW0033SI**	SAMPLE ID: **POL-MW0033SI-020.5-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.92	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.64 Liters. (0.005 x 33) + 0.475 = 0.64

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1410	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1400	2.0	2.0	200	3.29	4.62	29.99	478.49	0.06	15.74	105.7	Clear
1405	1.0	3.0	200	3.29	4.63	30.00	481.38	0.06	13.21	104.0	Clear
1410	1.0	3.0	200	3.29	4.64	29.95	478.69	0.05	10.06	99.6	Clear
1415	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden / Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1415	SAMPLING ENDED AT: 1420
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0035SI**	SAMPLE ID: **POL-MW0035SI-020.5-20221012** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/12/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.76	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1335	PURGING ENDED AT: 1355	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1345	2.0	2.0	200	2.96	4.66	25.95	139.78	0.06	0.55	67.1	Clear
1350	1.0	3.0	200	2.96	4.70	25.96	141.94	0.04	1.24	53.1	Clear
1355	1.0	4.0	200	2.96	4.74	25.93	143.41	0..04	7.17	44.7	Clear
1400	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1400	SAMPLING ENDED AT: 1405
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
2	2	CG	40 mL	HCL/4°C	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **MW0009**	SAMPLE ID: **SW3-MW0009-020.0-20221013** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/13/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.02	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 1**5 to 25**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **15**	BOTTOM DEPTH (feet bls): **25**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20	PURGING INITIATED AT: 1425	PURGING ENDED AT: 1445	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1435	2.0	2.0	200	5.51	6.42	26.15	707.14	0.09	15.49	-10.5	Clear
1440	1.0	3.0	200	5.51	6.44	26.02	702.57	0.07	12.29	-8.1	Clear
1445	1.0	4.0	200	5.51	6.43	26.14	707.57	0.06	11.48	-6.9	Clear
1450	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden / Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1450	SAMPLING ENDED AT: 1455
PUMP OR TUBING DEPTH IN WELL (feet): 20	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: Teflon	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **MW0024**	SAMPLE ID: **SW3-MW0024-040.0-20221018** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/18/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 2.45	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): 3**5 to 45**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

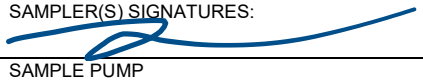
0.75 Liters. (0.005 x 55) + 0.475 = 0.75

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1305	PURGING ENDED AT: 1329	TOTAL VOLUME PURGED (Liters): 8.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1315	3.50	3.50	350.0	2.45	6.84	26.6	1530.0	0.06	4.82	-106.0	Clear
1320	1.75	5.25	I	2.49	6.82	26.4	1743.0	0.07	0.66	-115.8	I
1325	1.75	7.00	I	2.49	6.82	26.3	1801.0	0.05	1.64	-120.0	I
1329	1.40	8.40	350.0	2.49	6.83	26.3	1808.0	0.05	0.85	-121.5	CLEAR

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1330	SAMPLING ENDED AT: 1335
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP FLOW RATE (mL per minute): 200.0	TUBING MATERIAL CODE: hdpe	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
24	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:

After sample TD 44.25 ft. Toc

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **MW0025**	SAMPLE ID: **SW3-MW0025-040.0-20221018** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/18/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.77	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): 3**5 to 45**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

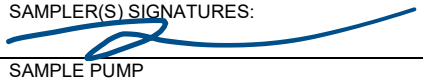
0.75 Liters. (0.005 x 55) + 0.475 =

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40	PURGING INITIATED AT: 1400	PURGING ENDED AT: 1425	TOTAL VOLUME PURGED (Liters): 9.3

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1410	4.0	4.0	400.0	7.80	6.84	25.8	1114.0	0.06	5.80	-128.5	Clear
1415	2.0	6.0	I	7.80	6.85	26.0	1108.0	0.05	1.45	-132.0	I
1420	2.0	8.0	I	7.80	6.87	25.8	1107.0	0.05	0.88	-135.0	I
1424	1.2	9.3	400.0	7.80	6.86	25.9	1113.0	0.04	0.85	-135.5	Clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1425	SAMPLING ENDED AT: 1430
PUMP OR TUBING DEPTH IN WELL (feet): 40	SAMPLE PUMP FLOW RATE (mL per minute): 200.0	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** New	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
25	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS: UNABLE TO CHECK TOTAL DEPTH TO MAY HOSES DOWN WELL

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **MW0027**	SAMPLE ID: **SW3-MW0027-032.0-20221018** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/18/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.77	CASING HEIGHT (feet als): 3.00	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **27 to 37**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **27**	BOTTOM DEPTH (feet bls): **37**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

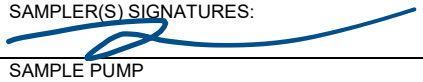
0.71 Liters. (0.005 x 47) + 0.475 = 0.71

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1110	PURGING ENDED AT:1134	TOTAL VOLUME PURGED (Liters): 7.72

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1120	2.80	2.80	280.0	7.83	6.63	26.2	2129.0	0.15	10.47	-101.0	clear
1125	1.40	4.20	I	7.83	6.64	26.1	2140.0	0.12	5.61	-105.0	I
1130	1.40	6.60	I	7.83	6.62	26.1	2146.0	0.12	3.72	-107.0	I
1134	1.12	7.72	280.0	7.84	6.61	26.2	2149.0	0.07	3.87	-107.5	Clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1134	SAMPLING ENDED AT: 1140
PUMP OR TUBING DEPTH IN WELL (feet): 32	SAMPLE PUMP FLOW RATE (mL per minute): 280.0	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** New hose	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS:
Down well hose damage replaced hose. After sample total depth check 39.35 ft toc 3.0 ft ag

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **MW0028**	SAMPLE ID: **SW3-MW0028-032.0-20221018** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **10/18/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.70	CASING HEIGHT (feet als): 3.00	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **27 to 37**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **27**	BOTTOM DEPTH (feet bls): **37**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

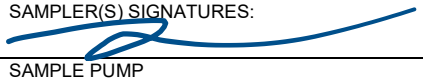
0.71 Liters. (0.005 x 47) + 0.475 = 0.71

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 32	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 32	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1029	TOTAL VOLUME PURGED (Liters): 10.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1015	4.50	4.50	450.0	7.73	6.47	25.3	2662.0	0.12	2.23	-115.0	Clear
1020	2.25	6.75	I	7.73	6.47	25.2	2667.0	0.09	0.81	-125.0	I
1025	2.25	9.00	I	7.73	6.47	25.2	2671.0	0.07	0.47	-133.0	I
1029	1.80	10.80	450.0	7.73	6.48	25.1	2668.0	0.05	0.39	-135.0	Clear

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel / Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1030	SAMPLING ENDED AT:1035
PUMP OR TUBING DEPTH IN WELL (feet): 32	SAMPLE PUMP FLOW RATE (mL per minute): 250.0	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl	N/A	<2	8260B TCL SOM01.2 CLP-LIKE	APP

REMARKS: After sample TD check 39.8 ft TOC 3.0 ft AG Soft

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Personnel:	Natalie Fabbri	(NF)	Env. Sci.	Tt
	Robert Siegel	(RS)		Tt

Weather: Cloudy, windy, 57 degrees F
Health and Safety (HAS): Topics: SSHASP; PPE; IDW
PPE: Level D
Objective: Continue POL 202212 Q7 Groundwater (GW) Sampling

0730: NF arrived at KSC; gathering equipment and supplies; daily prep; equilibrating wells for water level; calibration maintenance of machine
1055: Calibration and daily prep complete
1100: NF purging POL-MW0043I
1120: Purging Complete
1130: Sample Collected POL-MW0043I-025.0-20221222
1150: NF Purging POL-MW0041SI
1215: Purging Complete
1220: Sample Collected POL-MW0041SI-020.5-20221222
1310: NF Purging POL-MW0008I
1345: Purging Complete
1350: Sample Collected POL-MW0008I-027.5-20221222
1420: NF Purging POL-MW0036SI
1450: Purging Complete
1455: Sample Collected POL-MW0036SI-020.5-20221222
1530: RS samples signed over; samples taken to courier; NF offsite

Location KSC NASA Date 12.21.22

Project / Client POL

212 ig Pb 01365 / 112 go 9020

Cloudy 0 to 5 mph 60°

Robert Siegel Chuck S Natalie F

0615 TT 3028

0645 onsite 3042 Load gen supplies Equip

meet Chuck S Tailgate safety

review SOW

0745 TT 3042

0800 onsite 3050 POL unload

cart from Trailer gen setup

0830 Start Locates all wells

TD in EW

		8i		
		45i		
		44d		
		43i		
26.3-31.-	20.5	42s	122122-1420	18
		41si		
		36si		
		36i		
14.85	10.0	34s	122122-1520	5/1
	@EW	31s		

Rite in the Rain

36 Location KSC NASA Date 12.21.22

Project / Client POL

212 ig 06 43 65/112 90 9020

overcast 0 to 10 mph 70°

Robert Siegel Natalie F Ramtel

830 start locate Ramtel on cut down

1100 End locates Start WLs

	361, s,	17s
	44 d, i	
	45 s, i, d	
	43 s, i, c	
18	47 i, d, dd	26
	46 d, dd	
	16 s, i, d	
	11 i s	
	45 s, si, i	
	12 s, i	
	28 s, i	
	8 s, i, d	
	41 s,	
	42 s,	
	39 id	
	26 si	
	34 s	
	31 s	
	22 i d	

Location KSC NASA Date 12·21·22

Project / Client POL

212 ig Pb 01365 / 112-60-9020

Overcast 5 to 10 mph
Robert Siegel Natalie F

1310 End Water levels completed
setup equipment for water samples
pick up Ice
1345 Start MW0042 si set log

1435 Ice Sample store water
decon End MW 42si setup start
MW 34s ref log

1535 Ice sample store water decon
End MW 34s store all equipment
Supplies Ice all samples
review with Chuck S

1600 offsite TT 3052
1630 Hotel 3070

Rite in the Rain

Location ISC NASA Date 12.22.22

Project / Client DOL

212y Pk 01365 / 112 go 9020

overcast Fog Wind 5 70

Robert Siegel Natalie F

0600 TT 3181

0630 onsite "34 pickup supplies equipment Tee Tailgate safety review SOW with Checks

0700 TT offsite

0715 onsite DOL 3202 gen setup store supplies

Cal Check YSI 19F101434

No DO readings Pro Plus

Pro Plus 21J101770

Cond Fail Setup Start Sample MW 45 ref log New bottle white ware Black caps

1020 Ice Sample store water decon End MW 45 setup start MW 44d ref log

1145 Ice Sample store water decon End MW 44d setup Start MW 31s ref log

Location KSC NASA Date 12-22-22

Project / Client DOL

212 PL 01365 / 112 90 9020

Cloudy overcast 0°. 10 mph 70°

Robert Siegel Natalie F

1315 Ice Sample store water
decon End mw31s set up at
mw36i set up

1425 Ice Sample store water
decon End mw36i gw
clean up store supplies

1600 restart sparge system

Compressor at 40%
157° / 35° F° 102 PSI

Zone	SCFM	PSI	
3	0.0	2.0	DS Auto on
4	41.0	27.0	
5	115.0	26.0	
6	0.0	0.0	
7	0.0	0.0	
8	0.0	0.0	

1700 offsite TT 32°F / 16.5 breeze

40 Location KSC NASA Date 12-27-02

Project / Client PDC

212 19 96 01365 / 112 90 9020

Y.O Owrid Clarky

Robert Siegel

0515 TT

0630 onsite gen setup cal check

onload Air up gator/cart

get Ice cone work zone

update Form for 9s

0815 setup start MW9s ref log

0920 Ice sample store water

decon End MW9s

Complete COC gen forms

1015 Break 1245 TT

1300 meet lab with Samples Lab Rshop

1330 TT

1445 Break

Location KSC NASA Date 12-29-22

Project / Client POL

212ig 86 01365 / 112g09020

some Clouds 0 wind 50°

Robert Siegel

0615	TT
0730	onsite gen storage of all in Truck supplies / Equip Cal setup 4/S/s
0800	TT offsite Fedx 3724 Home Depot supplies
0845	Fedx 3738 No shipment at This Time need Tracking #s recieved Tracking #s 4 of review with Fedx staff in route To 650 E Costny Fedx before 30m unknown
0920	update Check Sondes
0930	TT
1000	onsite 3755 mark locations
1015	offsite TT Breakfast 315 TT
1330	onsite sample Kit check Stein
	onsite
1345	offsite TT 3813 1415 Hotel 3826 Break

TETRA TECH

INSTRUMENT CALIBRATION LOGSHEET

PROJECT NAME : KSC-NASA
SITE NAME: POL
PROJECT NO.: 112G09020

INSTRUMENT NAME/MODEL YSI Pro Plus / LaMotte 2020t
MANUFACTURER: YSI / LaMotte
SERIAL NUMBER: **YSI s# 19f101434 / LaMotte s#**

Date of Calibration (mm/dd/yr)	Person Performing Calibration (Name)	pH (S.U.)				Cond. (µS/cm)	D.O. (mg/L)	Temp. ºC	ORP (mV)	Salinity (%)	Turbidity (0) (NTUs)	Turbidity (10) (NTUs)	Calibration Standard Lot # / Expiration Date	Remarks
		Pre	*4.03*	*7.00*	9.68	1471	none	19.5	241	Na	0.05	9.87	***Lot # 210510d***	
12/22/2022	NF ccv/cal/icv AM	*Post*	*4.04*	*7.00*	10.00	X	Failed	X	X	Na	X	X	***Exp. Date: 12/22***	pH = 4
		Pre	*X*	*X*	X	X	NONE	X	X	Na	X	X	***Lot # ogl758***	
12/22/2022	NF ccv PM	*Post*	*4*	*7*	10	1482	D.O.mg/L	22.5	245	Na	0	10.02	***Exp. Date: 12/22***	pH = 7
		Pre					NOT			Na			***Lot # g1122c***	
		Post					USED			Na			***Exp. Date: 1/11/24***	pH = 10
		Pre								Na			***Lot # 6151***	
		Post								Na			***Exp. Date: 2/26***	Conductivity = 1413 µS/cm
		Pre	*YSI*	*USED*	FOR	Ph	Cond.	ORP	ONLY	Na			***Lot # 4801***	
		Post	*NO*	*YSI*	DO	DATA	FROM	THIS	UNIT	Na			***Exp. Date: 11/24***	ORP = 238 mV
		Pre								Na			***Lot # 21380129***	
		Post								Na			***Exp. Date: 4/23***	NTU=0
		Pre								Na			***Lot # 21140199***	
		Post								Na			***Exp. Date: 1/23***	Ntu=10
		Pre												
		Post												
		Pre												
		Post												
		Pre												
		Post												

TETRA TECH

INSTRUMENT CALIBRATION LOGSHEET

PROJECT NAME : KSC-NASA
SITE NAME: POL
PROJECT NO.: 112G09020

INSTRUMENT NAME/MODEL YSI ProQuatro / LaMotte 2020t
MANUFACTURER: YSI / LaMotte
SERIAL NUMBER: **YSI s# 21d101766 / LaMotte s# 1914-4019**

Date of Calibration (mm/dd/yr)	Person Performing Calibration (Name)		pH (S.U.)			Cond. (µS/cm)	D.O. (mg/L)	Temp. ºC	ORP (mV)	Salinity (%)	Turbidity (0) (NTUs)	Turbidity (10) (NTUs)	Calibration Standard Lot # / Expiration Date	Remarks
		Pre	*4.05*	*7.00*	9.95	1460	9.86	16.1	240	Na	0	10.05	***Lot # 210510d***	
12/21/2022	RSS ccv/cal/icv AM	*Post*	*X*	*X*	X	1413	X	X	X	Na	X	X	***Exp. Date: 12/22***	pH = 4
		Pre	*X*	*X*	X	X	X	X	X	Na	X	X	***Lot # ogl758***	
12/21/2022	RSS ccv PM	*Post*	*4*	*7*	10.05	1415	11.4	9.42	244	Na	0	9.95	***Exp. Date: 12/22***	pH = 7
		Pre	*4*	*7*	10.05	1415	11.4	9.42	244	Na	0	9.95	***Lot # g1122c***	
12/22/2022	RSS ccv AM PM	*Post*	*3.95*	*7.05*	10	1420	11.22	9.7	246	Na	0	9.95	***Exp. Date: 1/11/24***	pH = 10
		Pre											***Lot # 6151***	
		Post											***Exp. Date: 2/26***	Conductivity = 1413 µS/cm
		Pre	*3.95*	*7*	10.05	1450	10.45	13.9	240	Na	0.05	10.1	***Lot # 4801***	
12/27/2022	RSS ccv AM PM	*Post*	*3.95*	*7*	10	1445	15	10.8	244	Na	0	9.95	***Exp. Date: 11/24***	ORP = 238 mV
		Pre											***Lot # 21380129***	
		Post											***Exp. Date: 4/23***	NTU=0
		Pre											***Lot # 21140199***	
		Post											***Exp. Date: 1/23***	Ntu=10
		Pre												
		Post												
		Pre												
		Post												
		Pre												
		Post												

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL)	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	RS & NF
Weather Conditions:	Cloudy no rain	**Measuring Device:**	Herron Skinny Dipper
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number (POL-)	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
MW0008S	12/21/2022	12:16		5 to 10	4.45		
MW0008I	12/21/2022	12:17		25 to 30	5.22		
MW0011S	12/21/2022	12:05		10 to 15	5.45		No pad, well top damaged
MW0011I	12/21/2022	12:06		25 to 30	5.50		
MW0012S	12/21/2022	12:13		11 to 16	4.23		
MW0012I	12/21/2022	12:14		28 to 33	4.19		
MW0014S	12/21/2022	12:24		8 to 13	4.61		
MW0014SI	12/21/2022	12:25		18 to 23	4.52		
MW0014I	12/21/2022	13:05		25 to 30	5.76		
MW0014ID	12/21/2022	12:26		32 to 37	4.50		
MW0016S	12/21/2022	12:00		8 to 13	5.04		
MW0016I	12/21/2022	12:02		25 to 30	5.32		
MW0016D	12/21/2022	12:01		38 to 43	5.07		
MW0017S	12/21/2022	12:20		11 to 16	4.25		
MW0018S	12/21/2022	11:39		8 to 13	4.55		
MW0018I	12/21/2022	11:38		25 to 30	5.11		
MW0018D	12/21/2022	11:40		38 to 43	5.15		
MW0022I	12/21/2022	12:57		25 to 30	6.71		
MW0022D	12/21/2022	12:58		40 to 45	6.36		
MW0026S	12/21/2022	12:41		5 to 15	3.12		
MW0026I	12/21/2022	12:42		25 to 30	2.80		
MW0028S	12/21/2022	11:48		7 to 17	5.88		
MW0028I	12/21/2022	11:47		25 to 30	5.55		
MW0031S	12/21/2022	12:38		5 to 15	3.49		

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL)	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	RS & NF
Weather Conditions:	Cloudy no rain	**Measuring Device:**	Herron Skinny Dipper
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number (POL-)	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
MW0034S	12/21/2022	12:48		5 to 15	3.49		
MW0035S	12/21/2022	12:09		5 to 15	3.60		
MW0035SI	12/21/2022	12:10		18 to 23	3.91		
MW0036SI	12/21/2022	12:15		18 to 23	9.02		
MW0036I	12/21/2022	12:16		25 to 30	9.43		
MW0039ID	12/2/2022	12:31		32 to 37	5.67		
MW0041SI	12/21/2022	11:45		18 to 23	8.58		
MW0042SI	12/21/2022	11:43		18 to 23	7.95		
MW0043S	12/21/2022	11:30		10 to 20	9.68		
MW0043I	12/21/2022	11:31		20 to 30	9.72		
MW0043D	12/21/2022	11:32		30 to 40	9.62		
MW0044I	12/21/2022	11:38		20 to 30	9.79		
MW0044D	12/21/2022	11:39		30 to 40	9.70		
MW0045S	12/21/2022	11:34		10 to 20	9.50		
MW0045I	12/21/2022	11:35		20 to 30	9.66		
MW0045D	12/21/2022	11:36		30 to 40	9.71		
MW0046D	12/21/2022	11:52		30 to 40	8.65		
MW0046DD	12/21/2022	11:53		40 to 50	8.94		
MW0047I	12/21/2022	11:58		20 to 30	7.98		
MW0047D	12/21/2022	11:57		30 to 40	8.02		
MW0047DD	12/21/2022	11:56		40 to 50	8.01		

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0008I**	SAMPLE ID: **POL-MW0008I-027.5-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.2	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.82 Liters. (0.0098 x 40) + 0.475 = 0.82

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1310	PURGING ENDED AT: 1345	TOTAL VOLUME PURGED (Liters): 7

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1320	2	2	200	5.2	5.82	24.9	2005	0.10	11.45	-5	Clear
1325	1	3	200	5.2	5.83	24.3	2005	0.14	13.2	3.6	Clear
1330	1	4	200	5.2	5.85	24.1	1997	0.29	21.8	2.1	Clear
1335	1	5	200	5.2	5.85	24.0	1997	0.35	14	6.33	Clear
1340	1	6	200	5.2	5.86	24.1	2000	0.35	12.7	-0.4	Clear
1345	1	7	200	5.2	5.86	24.2	1998	0.33	18.1	1.6	Clear
1350	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1350	SAMPLING ENDED AT: 1355
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	NONE	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0009s**	SAMPLE ID: **POL-MW0009s-009.5-20221227** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/27/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.31	CASING HEIGHT (feet als): FLUSH	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **7 to 12**	
WELL DIAMETER (inches): 2.0	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **7**	BOTTOM DEPTH (feet bls): 12

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

5.30 Liters. (12-3.3)=8.69 X 0.61=5.3009

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.58 Liters. 0.005(0.005 X 25.0) = 0.13+0.45=0.58

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 9.5	PURGING INITIATED AT: 0840	PURGING ENDED AT: 0909	TOTAL VOLUME PURGED (Liters):11.6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0850	4.0	4.0	400.0	4.80	3.69	24.4	1085.0	0.38	11.00	250.0	CLEAR
0855	2.0	6.0	I	4.80	3.89	24.5	1417.0	0.23	1.95	94.0	I
0900	2.0	8.0	I	4.80	3.96	24.6	1457.0	0.18	1.45	75.5	I
0905	2.0	10.0	I	4.80	3.97	24.8	1506.0	0.15	1.25	67.0	I
0909	1.6	11.6	400.0	4.80	3.99	24.5	1538.0	0.15	1.05	62.0	Clear
0910	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0910	SAMPLING ENDED AT: 0920
PUMP OR TUBING DEPTH IN WELL (feet): 9.5	SAMPLE PUMP FLOW RATE (mL per minute): 200.0	TUBING MATERIAL CODE: T+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	NONE	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS: after sample total depth check 12.35 Ft. toc sump purge black To clear 0.50 Gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **MW0031S**	SAMPLE ID: **POL-MW0031S-010.0-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 12/22/2022

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.61	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.655 Liters=0.005+(0.005 x 40.0)+0.45

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1259	TOTAL VOLUME PURGED (Liters): 7.25

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1240	2.50	2.50	250.0	8.50	5.76	25.2	150.0	1.18	4.58	20.0	Clear
1245	1.25	3.75	I	8.50	5.68	25.1	151.5	0.88	3.65	21.7	I
1250	1.25	5.00	I	8.50	5.59	24.9	152.5	0.66	2.98	23.0	I
1255	1.25	6.25	I	8.50	5.51	25.1	152.0	0.60	2.93	27.0	I
1259	1.00	7.25	250.0	8.50	5.56	25.0	150.0	0.43	2.93	25.2	Clear
1300	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1300	SAMPLING ENDED AT: 1310
PUMP OR TUBING DEPTH IN WELL (feet): 10.0	SAMPLE PUMP FLOW RATE (mL per minute): 225.0	TUBING MATERIAL CODE: HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP

After sample total depth check 14.1 Ft toc sump purge black To clear 0.30 Gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0034S**	SAMPLE ID: **POL-MW0034S-010.0-20221221** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/21/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.49	CASING HEIGHT (feet als): -0.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **5**	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

1.7265 Liters. (15 –3.49) x 0.15 = 1.7265

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

Liters.

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	PURGING INITIATED AT: 1455	PURGING ENDED AT: 1519	TOTAL VOLUME PURGED (Liters): 7.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1505	3.0	3.0	300.0	4.15	5.99	25.2	296.7	0.70	21.6	73.3	Clear
1510	1.5	4.5	I	4.15	6.03	25.1	295.0	0.69	2.33	68.0	I
1515	1.5	6.0	I	4.15	6.04	25.2	294.5	0.64	0.56	61.5	I
1519	1.2	7.2	300.0	4.15	6.04	25.2	295.5	0.74	0.77	57.5	Clear
1520	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Slegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1520	SAMPLING ENDED AT: 1530
PUMP OR TUBING DEPTH IN WELL (feet): 10.0	SAMPLE PUMP FLOW RATE (mL per minute): 275.0	TUBING MATERIAL CODE: T+HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS: after sample total depth check 14.85 Ft. toc sump purge clear to clear 0.20 Gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0036I**	SAMPLE ID: **POL-MW0036I-027.5-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.35	CASING HEIGHT (feet als): 3.1	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.25	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005+(0.005 x 39.0) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1414	TOTAL VOLUME PURGED (Liters): 9.5

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1400	4.0	4.0	400.0	9.61	5.84	26.2	3346.0	0.06	1.39	-72.6	Clear
1405	2.0	6.0	I	9.61	5.86	26.3	3340.0	0.06	2.86	-73.2	I
1410	2.0	8.0	I	9.61	5.91	26.4	3382.0	0.05	1.17	-74.0	I
1414	1.6	9.6	400.0	9.61	5.92	26.4	3387.0	0.05	2.23	-74.5	clear
1415	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1415	SAMPLING ENDED AT: 1425
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS: after sample total depth check 33.25 Ft toc sump purge clear To clear 0.30 Gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0036SI**	SAMPLE ID: **POL-MW0036SI-020.5-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.98	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 + (0.005 x 33) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1420	PURGING ENDED AT: 1450	TOTAL VOLUME PURGED (Liters): 6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1430	2	2	200	8.98	3.66	26.0	2679	0.19	3.64	259.8	Clear
1435	1	3	200	8.98	3.66	25.6	2735	0.15	3.31	258.1	Clear
1440	1	4	200	8.98	3.67	24.9	2731	0.14	3.49	257.2	Clear
1445	1	5	200	8.98	3.67	24.9	2733	0.12	3.51	256.8	Clear
1450	1	6	200	8.98	3.66	25.0	2695	0.12	3.44	326.1	Clear
1455	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1455	SAMPLING ENDED AT: 1500
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0041SI**	SAMPLE ID: **POL-MW0041SI-020.5-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.59	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.64 Liters. 0.005 + (0.005 x 33) + 0.475 = 0.64

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1150	PURGING ENDED AT: 1215	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1200	2.0	2.0	200	9.59	3.63	25.5	3148	0.12	2.53	12	clear
1205	1.0	3.0	200	9.59	3.64	25.3	3197	0.11	2.45	13.7	clear
1210	1.0	4.0	200	9.59	3.64	25.2	3199	0.11	2.34	7.9	clear
1215	1.0	5.0	200	9.59	3.64	25.3	3195	0.11	2.41	3.1	clear
1220	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES: NAF	SAMPLING INITIATED AT: 1220	SAMPLING ENDED AT: 1225
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0042SI**	SAMPLE ID: **POL-MW0042SI-020.5-20221221** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/21/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.89	CASING HEIGHT (feet als): 3.1	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 + (0.005 x 34) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1355	PURGING ENDED AT: 1419	TOTAL VOLUME PURGED (Liters): 7.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1405	3.0	3.0	300.0	8.08	3..64	24.9	950.0	0.80	5.54	76.0	Clear
1410	1.5	4.5	I	8.08	3.64	25.5	944.0	0.20	0.52	40.0	\|
1415	1.5	6.0	I	8.08	3.65	25.4	950.0	0.16	0.69	28.0	\|
1419	1.2	7.2	300.0	8.08	3.66	25.6	947.0	0.15	0.20	24.3	Clear
1420	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1420	SAMPLING ENDED AT:14\30
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 275.0	TUBING MATERIAL CODE: HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP

REMARKS: after sample total depth check 26.3 ft.toc. Sump purge clear to clear. 0.30 Gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0043I**	SAMPLE ID: **POL-MW0043I-025.0-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 12/22/2022

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.77	CASING HEIGHT (feet als): 2.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **20**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 + (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	PURGING INITIATED AT: 1100	PURGING ENDED AT: 1120	TOTAL VOLUME PURGED (Liters): 4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	2.0	2.0	200	9.77	3.28	24.2	2449	1.63	3.77	405.2	Clear
1115	1.0	3.0	200	9.77	3.30	24.2	2447	1.51	2.68	406.6	Clear
1120	1.0	4.0	200	9.77	3.29	24.4	2443	1.35	2.03	406.9	Clear
1130	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1130	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 25.0	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0044D**	SAMPLE ID: **POL-MW0044D-035.0-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.72	CASING HEIGHT (feet als): 3.00	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **30 to 40**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **30**	BOTTOM DEPTH (feet bls): **40**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 (0.005 x 39) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35.0	PURGING INITIATED AT: 1110	PURGING ENDED AT: 1134	TOTAL VOLUME PURGED (Liters): 7.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1120	3.0	3.0	300.0	9.74	6.25	25.9	2816.0	0.25	4.99	-45.0	Clear
1125	1.5	4.5	I	9.74	6.38	25.9	2767.0	0.18	4.94	-44.0	I
1130	1.5	6.0	I	9.74	6.40	25.9	2683.0	0.14	4.76	-40.5	I
1134	1.2	7.2	300.0	9.74	6.42	25.9	2664.0	0.14	4.44	-39.0	Clear
1135	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1135	SAMPLING ENDED AT: 1145
PUMP OR TUBING DEPTH IN WELL (feet): 35.0	SAMPLE PUMP FLOW RATE (mL per minute): 275.0	TUBING MATERIAL CODE: HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP

REMARKS: Micro bubbles after sample total depth check 43.9 ft toc

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0045I**	SAMPLE ID: **POL-MW0045I-025.0-20221222** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **12/22/2022**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.69	CASING HEIGHT (feet als): 2.65	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 + (0.005 x 39) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	PURGING INITIATED AT: 9:35	PURGING ENDED AT: 1009	TOTAL VOLUME PURGED (Liters): 10.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0945	3.0	3.0	300.0	9.85	3.64	26.2	2444.0	3.18	0.91	377.5	clear
0950	1.5	4.5	I	9.85	3.65	26.5	2443.0	3.24	0.00	383.0	I
0955	1.5	6.0	I	9.85	3.63	26.3	2443.0	3.34	0.00	387.0	I
1000	1.5	7.5	I	9.85	3.63	26.5	2448.0	3.45	0.00	390.0	I
1005	1.5	9.0	I	9.85	3.63	26.6	2450.0	3.61	0.00	393.0	I
1009	1.2	10.2	300.0	9.85	3.63	26.5	2450.0	3.62	0.00	368.0	clear
1010	Sample	collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Robert Siegel /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1010	SAMPLING ENDED AT: 1020
PUMP OR TUBING DEPTH IN WELL (feet): 25.0	SAMPLE PUMP FLOW RATE (mL per minute): 275.0	TUBING MATERIAL CODE: T+HDPE+S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	3	CG	40 mL	HCl/4°C	N/A	<2	8260D (MOD) POL Custom List	APP
2	3	CG	40 mL	4°C	N/A	See Above	8260D (MOD) POL Custom List	APP

REMARKS: after sample total depth check. 33.1 Ft toc. Sump purge brown to clear 0.30 gal

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

03/08/2023 **POL** **112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Aaron Kupper	(AK)	Engineer	Tt
Weather:	Sunny – 80 degrees F			
PPE:	Level D			

Objective: Begin POL Performance GW monitoring event

0700: Tt on Base; gathering equipment and supplies; calibration/daily prep
0845: Calibration complete for CS/AK (See cal sheets); begin opening wells to equilibrate prior to collecting water levels
0945: Begin Collecting water levels
1015: CS offsite to KSC badging office
1130: CS back on site at POL; plan for today is to purge out the 1L required for all wells to be sampled for PFAS, then sample tomorrow
1235: CS purging POL-MW0022D
- Amount to be purged = (45.93 [Total Depth] – 7.54 [static depth to water btoc]) x 0.61 L/foot for a 2" well = 23.41L

1320: Purging Complete; approximately 25L purged at approximately 555 mL/min
1325: CS Purging POL-MW0022I
- Amount to be purged = (31.8 [Total Depth] – 7.64 [static depth to water btoc]) x 0.61 L/foot for a 2" well = 14.73L

1405: Purging Complete; approximately 15L purged at approximately 500 mL/min
1445: CS Purging POL-MW0031S
- Amount to be purged = (14.04 [Total Depth] – 3.33 [static depth to water btoc]) x 0.076 L/foot for a 3/4" well = 0.81L

1505: Purging Complete; approximately 4L purged at approximately 200 mL/min
1510: CS Purging POL-MW0026I
- Amount to be purged = (30 [Total Depth] – 3.83 [static depth to water btoc]) x 0.076 L/foot for a 3/4" well = 1.98L

1530: Purging Complete; approximately 8L purged at approximately 400 mL/min
1535: Purging POL-MW0026S
- Amount to be purged = (14.40 [Total Depth] – 3.93 [static depth to water btoc]) x 0.076 L/foot for a 3/4" well = 0.79L

1540: Well purged dry nearly immediately at max speed. Allowing to recharge a bit
1555: Purging Complete; approximately 1.5 L purged before well ran dry again
1600: CS Purging POL-MW0028I
- Amount to be purged = (31.42 [Total Depth] – 6.61 [static depth to water btoc]) x 0.076 L/foot for a 3/4" well = 1.88L

1615: Purging Complete; Approximately 10L purged at approximately 600 mL/min
1620: CS Purging POL-MW0028S
- Amount to be purged = (14.04 [Total Depth] – 7.00 [static depth to water btoc]) x 0.076 L/foot for a 3/4" well = 0.53L

1635: Purging Complete; well wanted to purge dry; approximately 2L purged at 200 mL/min
1645: CS Purging POL-MW0017S
- Amount to be purged = (17.00 [Total Depth] – 5.19 [static depth to water btoc] x 0.61 L/foot for a 2" well = 7.2L

1700: Purging Complete; approximately 10L purged at approximately 600 mL/min
1715: Development of PFAS wells complete

03/09/2023 **POL** **112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Aaron Kupper	(AK)	Engineer	Tt
Weather:	Sunny – 80 degrees F			
PPE:	Level D			

Objective: Begin POL Performance GW monitoring event

0700: CS on site; calibrating YSI/Lamotte (see cal sheets); daily prep
0730: AK on site
0750: CS departs site for FS3 utility locate
1000: CS on site
1045: CS Purging POL-MW0022D
1105: Purging Complete on MW0022D
1110: CS Collected POL-MW0022d-042.5-20230309 8260D VOCs/537 PFAS
1125: CS Purging POL-MW0022I
1145: Purging Complete on MW0022I
1150: CS Collected POL-MW0022I-027.5-20230309 8260 VOCs/537 PFAS
1250: CS Purging POL-MW0017S
1315: Purging Complete
1320: CS Collected POL-MW0017S-013.5-20230309 8260 VOCs/537 PFAS
1345: CS Purging POL-MW0031S
1415: Purging Complete on MW0031S
1420: CS Collected POL-MW0031S-010.0-20230309 8260 VOCs/537 PFAS
1435: CS Purging POL-MW0026I
1455: Purging Complete on MW0026I
1500: CS Collected POL-MW0026I-027.5-20230309 8260 VOCs/537 PFAS
0000: Sample Collected POL-FD-20230309-02 – DUP of POL-MW0026I-027.5-202303091
1530: CS Purging POL-MW0026S
1540: Well dry; allowing to recharge, collecting 1 reading, and collecting samples per FS2200 SOP
1635: CS Collected POL-MW0026S-014.8-20230309 8260VOCs/537 PFAS
1745: Site secured; Tt offsite

03/10/2023 **POL** **112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Aaron Kupper	(AK)	Engineer	Tt
Weather:	Sunny – 80 degrees F			
PPE:	Level D			

Objective: Complete POL Performance GW monitoring event

0700: CS on site; calibration/daily prep (See Cal Sheets)
0730: AK on site
0830: CS/AK Purging POL-MW0028I
0900: Purging Complete on MW0028I
0905: Sample Collected POL-MW0028I-027.5-20230310 8260 VOCs/537 PFAS
0920: Set up on POL-MW0034S; AK sampling well
0950 Sample Collected POL-MW0034S-010.0-20230310 8260 VOCs/537 PFAS
1214 Site secured TT offsite

TETRA TECH

INSTRUMENT CALIBRATION LOGSHEET

PROJECT NAME : Paint and Oil Locker (POL)
SITE NAME: POL
PROJECT NO.: 112G09020

INSTRUMENT NAME/MODEL YSI-ProQuatro/Lamotte
MANUFACTURER:
SERIAL NUMBER:

Date of Calibration (mm/dd/yr)	Person Performing Calibration (Name)		pH (S.U.)			Cond. (µS/cm)	D.O. (mg/L)	Temp. ºC	ORP (mV)	Salinity (%)	Turbidity (0) (NTUs)	Turbidity (10) (NTUs)	Calibration Standard Lot # / Expiration Date	Remarks
3/9/2023	A. Kupper	*Pre*	7.14	4.29	9.62	1264	8.63	23.2	224.5	NA	1.56	10.58	*Lot #F1022B*	
		Post	7.00	4.00	10.00	1413	10	23.2	224.5	NA	0	10	*Exp. Date: 06/10/2024*	pH = 4
		Pre											*Lot # E1022A*	
		Post											*Exp. Date: 05/10/2024*	pH = 7
		Pre											*Lot # G1122C*	
		Post											*Exp. Date: 01/11/2024*	pH = 10
		Pre											*Lot # CC22811*	
		Post											*Exp. Date: 06/13/2023*	Conductivity = 1413 µS/cm
		Pre											*Lot # 21K100461*	
		Post											*Exp. Date: 10/23/2026*	ORP = 223 mV
		Pre											*Lot # 22180091*	
		Post											*Exp. Date: 05/2023*	Turb.=0 NTU
		Pre											*Lot # 19230122B*	
		Post											*Exp. Date: 07/2024*	Turb.=10 NTU
		Pre												
		Post												
		Pre												
		Post												
		Pre												
		Post												

TETRA TECH

INSTRUMENT CALIBRATION LOGSHEET

PROJECT NAME : Paint and Oil Locker (POL)
SITE NAME: POL
PROJECT NO.: 112G09020

INSTRUMENT NAME/MODEL YSI-ProQuatro/Lamotte 2020we
MANUFACTURER: YSI/Lamotte
SERIAL NUMBER: 21D101770/1914-4019

Date of Calibration (mm/dd/yr)	Person Performing Calibration (Name)		pH (S.U.)			Cond. (µS/cm)	D.O. (mg/L)	Temp. ºC	ORP (mV)	Salinity (%)	Turbidity (0) (NTUs)	Turbidity (10) (NTUs)	Calibration Standard Lot # / Expiration Date	Remarks
3/8/2023	C. Sorden	*Pre*	7.18	4.67	10.38	1425	86.6	24.1	227.4	NA	0.2	10.51	*Lot #F1022B*	
		Post	7.00	4.00	10.00	1413	100.3	24.1	223	NA	0	10	*Exp. Date: 06/10/2024*	pH = 4
3/9/2023	C. Sorden	*Pre*	6.75	10.27	4.05	1278	101.2	21.2	227.2	NA	0.12	10.11	*Lot # E1022A*	
		Post	7.00	10.00	4.00	1279.00	100.70	21.20	223.00	NA	0	10	*Exp. Date: 05/10/2024*	pH = 7
3/10/2023	C. Sorden	*Pre*	6.85	10.04	4.27	1292.00	99.00	20.40	225.30	NA	0.00	9.61	*Lot # G1122C*	
		Post	7.00	10.00	4.00	1278.00	100.40	20.40	223.00	NA	0.00	10.00	*Exp. Date: 01/11/2024*	pH = 10
		Pre											*Lot # CC22811*	
		Post											*Exp. Date: 06/13/2023*	Conductivity = 1413 µS/cm
		Pre											*Lot # 21K100461*	
		Post											*Exp. Date: 10/23/2026*	ORP = 223 mV
		Pre											*Lot # 22180091*	
		Post											*Exp. Date: 05/2023*	Turb.=0 NTU
		Pre											*Lot # 19230122B*	
		Post											*Exp. Date: 07/2024*	Turb.=10 NTU
		Pre												
		Post												
		Pre												
		Post												
		Pre												
		Post												

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL)	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	C. Sorden/ A. Kupper
Weather Conditions:	Sunny 75°F	**Measuring Device:**	InSitu WLM
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number (POL-)	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
MW0012S	3/8/2023	1002		11 to 16	5.19		TD=17.52
MW0012I	3/8/2023	1000		28 to 33	5.18		TD=34.93
MW0014SI	3/8/2023	950		18 to 23	5.56		TD=23.08
MW0014I	3/8/2023	955		25 to 30	5.84		TD=31.65
MW0014ID	3/8/2023	954		32 to 37	5.51		TD=37.1
MW0017S	3/8/2023	1007		11 to 16	5.19		TD=17.00
MW0022I	3/8/2023	939		25 to 30	7.64		TD=31.8
MW0022D	3/8/2023	945		40 to 45	7.54		TD=45.93
MW0026S	3/8/2023	1012		5 to 15	3.93		TD=14.40
MW0026I	3/8/2023	1014		25 to 30	3.83		TD=26.95
MW0028S	3/8/2023	1019		7 to 17	7.00		TD=16.55
MW0028I	3/8/2023	1020		25 to 30	6.61		TD=31.42
MW0031S	3/8/2023	1030		5 to 15	3.33		TD=14.04
MW0034S	3/8/2023	1040		5 to 15	4.44		TD=14.63
MW0035SI	3/8/2023	1045		18 to 23	4.87		TD=23.48

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0012I**	SAMPLE ID: **POL-MW0012I-030.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.12	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **28 to 33**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **28**	BOTTOM DEPTH (feet bls): **33**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.70 Liters. (0.005 x 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.5	PURGING INITIATED AT: 1350	PURGING ENDED AT: 1405	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1355	1	1	200	5.21	7.02	25.5	647	0.19	2.29	132.0	Clear
1400	1	2	200	5.20	7.05	25.5	646	0.14	2.03	-129.7	-
1405	1	3	200	5.20	7.04	25.5	644	0.14	2.13	-128.8	-
1410	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron Kupper/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1410	SAMPLING ENDED AT: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 30.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE:	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260D (MOD) NASA LC34 Custom List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260D (MOD) NASA LC34 Custom List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0012S**	SAMPLE ID: **POL-MW0012S-013.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/ 09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc):	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **11 to 16**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **11**	BOTTOM DEPTH (feet bls): **16**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

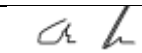
0.61 Liters. (0.005 x 26) + 0.475 = 0.61

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	PURGING INITIATED AT: 1235	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1240	1	1	200	5.89	5.69	25.3	238.3	0.61	54.6	-63.2	Yellow
1250	2	3	200	5.89	5.50	25.3	170.9	0.31	19.7	-72.0	-
1255	1	4	200	5.89	5.43	25.5	165.3	0.28	18.6	-74.2	-
1300	1	5	200	5.89	5.42	25.5	164.9	0.24	16.9	-75.0	-
1305	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1305	SAMPLING ENDED AT: 13156(
PUMP OR TUBING DEPTH IN WELL (feet): 13.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0014I**	SAMPLE ID: **POL-MW0014I-027.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/ 09//2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.83	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

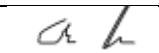
0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 0835	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0840	1	1	200	6.75	6.98	24.6	2392	0.26	2.18	-4.6	Clear
0845	1	2	200	7.19	7.02	24.3	2402	0.22	5.42	-40.7	-
0850	1	3	200	7.51	7.05	24.5	2424	0.24	2.20	-58.4	-
0900	1.5	4.5	150	7.74	7.08	24.6	2375	0.35	2.26	-80.0	-
0910	1.5	6	150	7.81	7.09	24.8	2363	0.32	2.95	-90.1	-
0915	0.75	6.75	150	7.81	7.11	24.9	2386	0.29	2.18	-97.1	-
0920	0.75	7.50	150	7.81	7.11	25.0	2402	0.28	2.34	-99.4	-
0925	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 0925	SAMPLING ENDED AT: 0935
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 150	TUBING MATERIAL CODE: HDPE,S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS: Added new hdpe tubing Replacing vinyl tubing in well And purged 3 well Volumes on 03/08/23.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0014ID**	SAMPLE ID: **POL-MW0014ID-034.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.52	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **32 to 37**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **32**	BOTTOM DEPTH (feet bls): **37**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

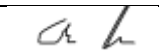
0.71 Liters. (0.005 x 47) + 0.475 = 0.71

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1025	TOTAL VOLUME PURGED (Liters): 4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1010	1	1	200	5.55	6.99	25.0	1012	0.22	16.5	-110.2	Clear
1015	1	2	200	5.55	6.99	25.0	1009	0.16	7.66	-112.5	-
1020	1	3	200	5.55	6.99	24.9	1006	0.14	7.08	-113.1	-
1025	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1025	SAMPLING ENDED AT: 1035
PUMP OR TUBING DEPTH IN WELL (feet): 34.5	SAMPLE PUMP FLOW RATE (mL per minute):	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:Replaced vinyl tubing with hdpe tubing and purged 3 well volumes on 03/09/23.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0014SI**	SAMPLE ID: **POL-MW0014SI-020.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/ 09//2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.70	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

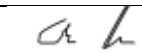
0.65 Liters. (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1105	PURGING ENDED AT: 1125	TOTAL VOLUME PURGED (Liters): 4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1110	1	1	200	5.72	3.94	25.2	1005	0.18	15.5	338.0	Clear
1115	1	2	200	5.72	3.94	25.1	1015	0.13	5.26	326.6	-
1120	1	3	200	5.72	3.91	25.3	1006	0.09	2.21	317.4	-
1125	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

Aaron Kupper//Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1125	SAMPLING ENDED AT: 1135
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0017S**	SAMPLE ID: **POL-MW0017S-013.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.40	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **11 to 16**	
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **11**	BOTTOM DEPTH (feet bls): **16**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.61 Liters. (0.005 x 26) + 0.475 = 0.61

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	PURGING INITIATED AT: 1250	PURGING ENDED AT: 1315	TOTAL VOLUME PURGED (Liters): 5.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1300	2.0	2.0	200	7.05	6.94	25.3	664	0.06	10.47	-79.7	Yellow
1305	1.0	3.0	200	7.05	6.92	25.3	688	0.08	12.3	-85.4	Yellow
1310	1.0	4.0	200	7.05	6.92	25.2	703	0.14	8.86	-93.2	Yellow
1315	1.0	5.0	200	7.05	6.91	25.1	690	0.14	7.94	-105.6	Yellow
1320	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1320	SAMPLING ENDED AT: 1330
PUMP OR TUBING DEPTH IN WELL (feet): 13.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE (NEW)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0022D**	SAMPLE ID: **POL-MW0022D-042.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.40	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **40 to 45**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **40**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.75 Liters. (0.005 x 55) + 0.475 = 0.75

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 42.5	PURGING INITIATED AT: 1045	PURGING ENDED AT: 1105	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1055	2.0	2.0	200	7.76	7.22	23.5	3453	0.14	4.75	-99.1	Clear
1100	1.0	3.0	200	7.76	7.29	23.7	3467	0.14	3.83	-101.5	Clear
1105	1.0	4.0	200	7.76	7.31	23.6	3460	0.15	4.19	-102.3	Clear
1110	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1110	SAMPLING ENDED AT: 1120
PUMP OR TUBING DEPTH IN WELL (feet): 42.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE (New)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0022I**	SAMPLE ID: **POL-MW0022I-027.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 7.70	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1125	PURGING ENDED AT: 1145	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1135	2.0	2.0	200	7.89	7.36	23.2	1298	0.06	4.94	-105.3	Clear
1140	1.0	3.0	200	7.89	7.34	23.4	1321	0.06	2.44	-107.7	Clear
1145	1.0	4.0	200	7.89	7.33	23.3	1368	0.05	1.33	-118.4	Clear
1150	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1150	SAMPLING ENDED AT: 1200
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE (NEW)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	6	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS: MS/MSD Collected for PFAS

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026I**	SAMPLE ID: **POL-MW0026I-027.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.89	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1435	PURGING ENDED AT: 1455	TOTAL VOLUME PURGED (Liters): 4.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1445	2.0	2.0	200	4.75	6.94	27.1	897	0.06	8.00	-113.6	Clear
1450	1.0	3.0	200	4.75	6.96	27.2	898	0.05	7.85	-117.2	Clear
1455	1.0	4.0	200	4.75	7.06	27.3	902	0.04	10.33	-120.7	Clear
1500	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1515
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE (NEW)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: **(Y)** N	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

REMARKS: DUP ID = POL-FD-20230309-02

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026S**	SAMPLE ID: **POL-MW0026S-014.8-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.94	CASING HEIGHT (feet als): -0.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.44	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **5**	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

0.73 Liters (15 – 5.44) x 0.076 = 0.73

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

Liters.

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.2	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.8	PURGING INITIATED AT: 1530	PURGING ENDED AT:	TOTAL VOLUME PURGED (Liters):

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1540	1.0	1.0	100	Dry							
1600	-	-	-		5.63	28.1	691	0.43	Overrange	46.2	Brown
1635	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION Charles Sorden /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1635	SAMPLING ENDED AT: 1655
PUMP OR TUBING DEPTH IN WELL (feet): 14.8	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE (NEW)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

REMARKS: Well consistently purges dry at 100 mL/min. Recommend replacement.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0028I**	SAMPLE ID: **POL-MW0028I-027.5-20230310** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/10/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.56	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 0830	PURGING ENDED AT: 0900	TOTAL VOLUME PURGED (Liters): 6.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0840	2.0	2.0	200	6.75	6.79	24.8	1401	0.13	4.94	-100.8	Clear
0845	1.0	3.0	200	6.75	6.80	25.0	1408	0.15	3.78	-103.8	Clear
0850	1.0	4.0	200	6.75	6.81	25.3	1412	0.17	4.70	-104.5	Clear
0855	1.0	5.0	200	6.75	6.79	25.2	1409	0.20	5.04	-101.9	Clear
0900	1.0	6.0	200	6.75	6.81	25.1	1409	0.14	4.18	-102.0	Clear
0905	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0905	SAMPLING ENDED AT: 0915
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE (NEW)	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0028S**	SAMPLE ID: **POL-MW0028S-010.0-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6..62	CASING HEIGHT (feet als): 0.13	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 6.49	WELL SCREEN INTERVAL DEPTH (feet bls): **7 to 17**

WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 7	BOTTOM DEPTH (feet bls): **17**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

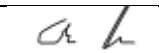
0.56 Liters. (0.005 x 17) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 1610	PURGING ENDED AT: 1635	TOTAL VOLUME PURGED (Liters): 2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1615	1	1	200	9.82	3.97	23.9	1015	0.66	18.6	63.2	Yellow
1620	1	2	200	10.35	3.83	24.1	2287	1.14	8.02	63.4	-
1645	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1645	SAMPLING ENDED AT: 1650
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPEP	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:
Water pulled down past 10'. Pulled all way down. Waited for recharge to sample and followed FDEP SOP guidelines.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech, Inc. / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **MW0031S**	SAMPLE ID: **POL-MW0031S-010.0-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.44	CASING HEIGHT (feet als):	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als):	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**

WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls):	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: **1 EQUIPMENT VOL.** = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 10.0	PURGING INITIATED AT: 1345	PURGING ENDED AT: 1415	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1405	2.0	2.0	100	4.72	6.27	29.9	180.2	0.31	4.53	-20.8	Clear
1410	0.5	2.5	100	4.72	6.26	30.0	177.7	0.28	3.78	-20.0	Clear
1415	0.5	3.0	100	4.72	6.23	30.1	172.8	0.31	3.37	-23.0	Clear
1420	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Charles Sorden/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1420	SAMPLING ENDED AT: 1435

PUMP OR TUBING DEPTH IN WELL (feet): 10.0	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE (NEW)

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	PFAS QSM Table B-15	APP

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0034S**	SAMPLE ID: **POL-MW0034S- 027.5-20230310** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/10/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.43	CASING HEIGHT (feet als): -0.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 4.93	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **5**	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters. (15 –) x 0.15 =

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.6 Liters. (25x0.005)+0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet):	FINAL PUMP OR TUBING DEPTH IN WELL (feet):	PURGING INITIATED AT: 0925	PURGING ENDED AT: 0950	TOTAL VOLUME PURGED (Liters):4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
0930	1	1	200	4.81	6.66	25.1	252.5	1.03	4.61	64.4	Clear
0935	1	2	200	4.84	6.43	25.2	248.0	0.82	4.35	63.3	Clear
0940	1	3	200	4.84	6.40	25.2	248.0	0.62	4.05	60.3	-
0945	1	4	200	4.84	6.39	25.3	249.1	0.54	3.41	59.5	-
0950	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 0950	SAMPLING ENDED AT: 1000
PUMP OR TUBING DEPTH IN WELL (feet):	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE:	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0035SI**	SAMPLE ID: **POL-MW0035SI-020.5-20230309** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **03/09/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.59	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1455	PURGING ENDED AT: 1515	TOTAL VOLUME PURGED (Liters):4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1500	1	1	200	4.93	5.57	24.3	1283	0.13	2.77	-117.7	Clear
1505	1	2	200	4.93	5.56	24.3	1291	0.13	1.91	-115.6	-
1510	1	3	200	4.93	5.51	24.4	1298	0.09	2.19	-113.8	-
1515	Sample	Collected									

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Aaron kupper/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1515	SAMPLING ENDED AT: 1525
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE, S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260B (MOD) Full List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260B (MOD) Full List	APP
3	2	HDPE	250 mL	None	N/A	See Above	EPA 537 (MOD) PFAS	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Project Number: 112G09020 **Project Name:** Paint and Oil Locker

Date: 7/5/2023 **Weather:** hot, clear, sunny

Personnel: Natalie Volk (NAV), Engineer

Health and Safety: heat stress, stinging insects

PPE: Level D **Objective:** Complete POL/SW3 GW monitoring event

Equipment: YSI Pro Quatro Lamotte 2020 Geopump II Choose an item.

Field Notes:

1000: NAV onsite for equipment pickup and calibration

1050: Calibration complete move to site, trouble locating wells

1230: Located well, Begin purge POL-MW0036SI-020.5-20230705

1245: Sample POL-MW0036SI-020.5-20230705

1308: Begin to purge POL-MW0036I-027.5-20230705

1320: Sample POL-MW0036I-027.5-20230705

1330: Begin light rain

1350: End light rain

1355: Begin purge POL-MW0044D-035.0-20230705

1407: Sample POL-MW0044D-035.0-20230705

1415: Break to get more buckets for purge water

1510: Begin purge POL-MW0041SI-020.5-20230705

1524: Sample POL-MW0041SI-020.5-20230705

1545: Begin purge POL-MW0042SI-020.5-20230705

1601: Sample POL-MW0042SI-020.5-20230705

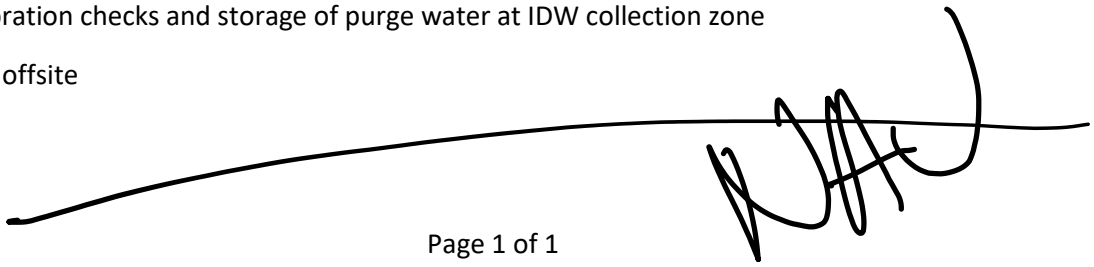
1620: Begin Purge POL-MW0043I-025.0-20230705

1635: Sample POL-MW0043I-025.0-20230705

1640: End groundwater sampling for day, Pack and clean supplies

1700: Calibration checks and storage of purge water at IDW collection zone

1720: NAV offsite



07/06/2023 POL/SW3

Personnel:	Natalie Fabbri	(NF)	Env. Scientist	Tt
	Natalie Volk	(NV)	engineer	Tt

Weather: Sunny and 80°F
PPE: Level D
Objective: Complete POL/SW3 GW monitoring event

0700 NF NV arrive on base; gathering equipment.
0720 NF calibrating equipment, daily prep, health and safety gathering.
0800 arrived at POL

0810 Purging SW3- MW0032		
0825 Sample collected	SW3-MW0032-047.5-20230706	8260 POL CUSTOM
0840 Purging SW3-MW0031		
0843 Sample Collected	SW3-MW0031-047.5-20230706	8260 POL CUSTOM
0905 Purging SW-MW0030		
0191 Sample Collected	SW3-MW0030-040.0-20230706	8260 POL CUSTOM
0932 Purging MW0029		
0950 Sample Collected	SW3-MW0029-020.0-20230706	8260 POL CUSTOM

Offsite to get more ice

1030 Purging POL-MW0048I		
1041 Sample Collected	POL-MW0048I-030.0-20230706	8260 POL CUSTOM
1048 Purging POL-MW0048D		
1059 Sample Collected	POL-MW0048-040.0-20230706	8260 POL CUSTOM
1115 Purging SW3-MW0035		
1130 Sample Collected	SW3-MW0035-047.5-20230706	
1136 Purging SW3-MW0034		
1155 Sample Collected	SW3-MW0034-040.0-20230706	8260 POL CUSTOM
1204 Purging SW3-MW0033		
1221 Sample Collected	SW3-MW0033-030.0-20230706	8260 POL CUSTOM
1245 Purging POL-MW0026I		
1300 Sample Collected	POL-MW0026I-027.5-20230706	8260 POL CUSTOM
1308 Purging POL-MW0026S		

1315 Well purged dry
1330 reading collected

1333 Sample Collected	POL-MW0026S-013.6-20230706	8260 POL CUSTOM
1400 Purging POL-MW0008I		
1414 Sample Collected	POL-MW00081-027.5-20230706	8260 POL CUSTOM
1424 Purging POL-MW0028I		
1438 Sample Collected	POL-MW0028I-027.5-20230706	8260 POL CUSTOM
1445 Purging POL-MW0028S		
1500 Sample Collected	POL-MW0028S-014.5-20230706	8260 POL CUSTOM
1518 Purging POL-MW0012S		
1535 Sample Collected	POL-MW0012S-013.5-20230706	8260 POL CUSTOM
1550 Purging POL-MW0035SI		
1603 Sample Collected	POL-MW0035SI-020.5-20230706	8260 POL CUSTOM
1615 Purging POL-MW0014ID		
1630 Sample Collected	POL-MW0014ID-034.5-20230706	8260 POL CUSTOM

1633 Phase 2 lightning warning in effect
1715 Tt offsite

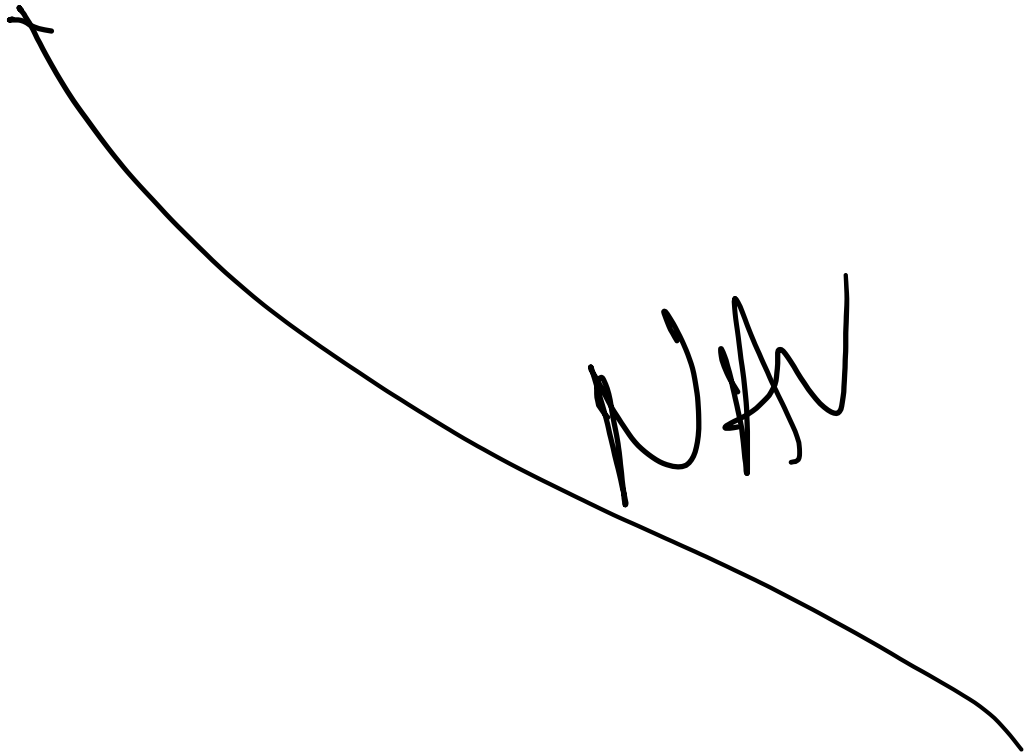


07/07/2023 POL/SW3

Personnel:	Natalie Fabbri	(NF)	Env. Scientist	Tt
	Natalie Volk	(NV)	engineer	Tt

Weather: Sunny and 80°F
PPE: Level D
Objective: Complete POL/SW3 GW monitoring event

0700 NF NV arrive on base; gathering equipment.
0720 NF calibrating equipment, daily prep, health and safety gathering. QA/QC samples from 7/6/23
0840 arrived at POL
0845 Purging POL-MW0014ID sample from 7/6/23 pulled.
0857 Sample Collected POL-MW0014ID-034.5-20230707 8260 POL CUSTOM
0914 Purging POL-MW0045I
0927 Sample Collected POL-MW0045I-025.0-20230707 8260 POL CUSTOM
0940 Purging MW0044D
0953 Sample Collected POL-MW0044D-035.0-20230707 8260 POL CUSTOM
1000 drop off IDW. Site secured.
1030 TT offsite



TETRA TECH

INSTRUMENT CALIBRATION LOGSHEET

PROJECT NAME : Paint and Oil Locker (POL) and SW3
SITE NAME: POL and SW3
PROJECT NO.: 112G09020

INSTRUMENT 1 : MiniRAE MiniRAE 3000 SN# 592-916169
INSTRUMENT 2: Lamotte 2020t SN# 1513-2219
Other/Rental:

Date of Calibration (mm/dd/yr)	Person Performing Calibration (Name)		pH (S.U.) 7	pH (S.U.) 4	pH (S.U.) 10	Cond. (µS/cm)	D.O. (%)	D.O. mg/L	Temp. °C	ORP (mV)	Salinity (%)	Turbidity (0) (NTUs)	Turbidity (10) (NTUs)	Calibration Standard Type	Calibration Standard Value	Calibration Standard Lot # / Expiration Date	Remarks
07/05/2023	NAV	*Pre*	*7.00*	*4.00*	10.00	1413	100.7	8.94	-	223	NA	0.01	7.18	pH	4	*Lot # C0923A*	
		Post														*Exp. Date 03/09/2025*	
07/06/2023	NAV	*Pre*	*7.02*	*4.03*	10.04	1411	100.5	9.21	-	215	NA	0.01	7.28	pH	7	*Lot # C0623D*	
		Post														*Exp. Date 03/06/2025*	
07/07/2023	NAV	*Pre*	*7.00*	*4.00*	10.00	1412	99.2	8.55	-	220	NA	0.01	7.73	pH	10	*Lot # B2123A*	
		Post														*Exp. Date 08/21/2024*	
		Pre												Cond. (µS/cm)	1413	*Lot # 8199*	
		Post														*Exp. Date 10/01/2027*	
		Pre												ORP mV	223	*Lot # 21K100461*	
		Post														*Exp. Date*	
		Pre												Turbidity	0	*Lot #*	
		Post														*Exp. Date*	
		Pre												Turbidity	10	*Lot #*	
		Post														*Exp. Date*	
		Pre															
		Post															
		Pre															
		Post															
		Pre															
		Post															

Additional Comments:

FDEP Acceptance criteria: DO +/- 0.3 mg/L, SPC +/- 5% , ORP +/- 10mV, pH +/- 0.2 SU, NTU (0.1-10) +/- 10%, (11-40) +/- 8%, (41-100) +/- 6.5%, (>100) +/- 5%

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL) and SW3	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	Aaron Kupper/Chuck Sorden
Weather Conditions:		**Measuring Device:**	InSitu WLM
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
SW3-MW0001	6/26/2023	1300		15 to 25	4.86		
SW3-MW0002	6/26/2023	1301		35 to 45	4.96		
SW3-MW0003	6/26/2023	1303		15 to 25	5.43		
SW3-MW0004	6/26/2023	1305		35 to 45	5.5		
SW3-MW0005	6/26/2023	1221		15 to 25	2.84		
SW3-MW0006	6/26/2023	1222		35 to 45	2.82		
SW3-MW0007	6/26/2023	NA		15 to 25	Abandoned		Abandoned
SW3-MW0008	6/26/2023	NA		35 to 35	Abandoned		Abandoned
SW3-MW0009	6/26/2023	1259		15 to 25	5.37		
SW3-MW0010	6/26/2023	12.58		35 to 45	5.37		
SW3-MW0011	6/26/2023	1254		15 to 25	9.04		
SW3-MW0012	6/26/2023	1256		35 to 45	9.12		
SW3-MW0013	6/26/2023	1247		15 to 25	5.28		
SW3-MW0014	6/26/2023	1248		35 to 45	5.24		
SW3-MW0015	6/26/2023	1213		15 to 25	3.17		
SW3-MW0016	6/26/2023	1214		35 to 45	3.09		
SW3-MW0017	6/26/2023	1224		15 to 25	2.79		
SW3-MW0018	6/26/2023	1225		35 to 45	2.78		
SW3-MW0019	6/26/2023	1155		15 to 25	7.04		
SW3-MW0020	6/26/2023	1157		35 to 45	7.00		
SW3-MW0021	6/26/2023	1306		15.2 to 24.7	5.74		
SW3-MW0022	6/26/2023	1220		15.2-24.7	2.83		
SW3-MW0023	6/26/2023	1243		15.2 to 24.7	2.81		
SW3-MW0024	6/26/2023	1242		35 to 45	2.75		
SW3-MW0025	6/26/2023	1302		35 to 45	8.03		
SW3-MW0026	6/26/2023	1307		35 to 45	5.76		
SW3-MW0027	6/26/2023	1334		27 to 37	8.21		

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL) and SW3	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	Aaron Kupper/Chuck Sorden
Weather Conditions:		**Measuring Device:**	InSitu WLM
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
SW3-MW0028	6/26/2023	1332		27 to 37	8.31		
SW3-MW0029	6/26/2023	1206		15 to 25	5.58		24.78. TD
SW3-MW0030	6/26/2023	1204		35 to 45	5.71		44.80 TD
SW3-MW0031	6/26/2023	1202		45 to 50	5.77		49.18. TD
SW3-MW0032	6/26/2023	1158		45 to 50	4.48		49.90 TD
SW3-MW0033	6/26/2023	1152		25 to 35	3.86		34.83 TD
SW3-MW0034	6/26/2023	1150		35 to 45	3.86		44.80 TD
SW3-MW0035	6/26/2023	1148		45 to 50	4.03		49.81 TD
POL-MW0001S	6/26/2023	1325		3 to 13	2.69	6.97	
POL-MW0008S	6/26/2023	1342		5 to 10	3.86	8.58	
POL-MW0008I	6/26/2023	1341		25 to 30	4.94	8.8	
POL-MW0009S	6/26/2023	1237		7 to 12	2.89		
POL-MW0009SI	6/26/2023	1238		18 to 23	2.78		Needs new plug
POL-MW0009I	6/26/2023	1239		25 to 30	2.78		
POL-MW0011S	6/26/2023	1448		18 to 23	5.12	0	14.62 TD
POL-MW0011I	6/26/2023	1415		25 to 30	5.33	8.64	
POL-MW0012S	6/26/2023	1351		11 to 16	3.92	7.7	
POL-MW0012I	6/26/2023	1352		28 to 33	3.93	7.65	
POL-MW0014S	6/26/2023	1413		8 to 13	4.25	0	
POL-MW0014I	6/26/2023	1412		25 to 30	4,55	7.88	
POL-MW0014SI	6/26/2023	1410		18 to 23	4.29	7.62	
POL-MW0014ID	6/26/2023	1411		32 to 37	4.28	7.63	
POL-MW0016S	6/26/2023	1445		8 to 13	4.39	0	13.47 TD
POL-MW0016I	6/26/2023	1443		25 to 30	5.11	0	
POL-MW0016D	6/26/2023	1444		38 to 43	4.93	7.57	
POL-MW0017S	6/26/2023	1337		11 to 16	4.05	7.92	
POL-MW0018S	6/26/2023	1330		8 to 13	4.33	0	TD 13.85
POL-MW0018I	6/26/2023	1328		25 to 30	4.99	8.56	

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL) and SW3	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	Aaron Kupper/Chuck Sorden
Weather Conditions:		**Measuring Device:**	InSitu WLM
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
POL-MW0018D	6/26/2023	1329		38 to 43	5.01	8.42	
POL-MW0021S	6/26/2023	1311		8 to 13	3.11	0	
POL-MW0022D	6/26/2023	1046		40 to 45	6.77	9.02	
POL-MW0022I	6/26/2023	1045		25 to 30	6.39	9.25	
POL-MW0026S	6/26/2023	1230		5 to 15	2.79	6.69	
POL-MW0026I	6/26/2023	1229		25 to 30	2.51	6.62	
POL-MW0028S	6/26/2023	1348		7 to 17	5.28	9.17	TD 16.29
POL-MW0028I	6/26/2023	1346		27 to 32	5.34	9.11	synoptic water level shows 25-30. TD 31.19
POL-MW0029S	6/26/2023	1227		5 to 15	3.24	7.26	
POL-MW0031S	6/26/2023	1235		5 to 15	3.30	7.19	
POL-MW0031I	6/26/2023	1234		25 to 30	3.22	7.22	
POL-MW0033S	6/26/2023	1313		5 to 15	3.22	7.66	
POL-MW0033I	6/26/2023	1315		25 to 30	3.45	7.7	
POL-MW0033SI	6/26/2023	1316		18 to 23	3.43	7.69	
POL-MW0034S	6/26/2023	1320		5 to 15	3.21	7.52	
POL-MW0035S	6/26/2023	1354		5 to 15	2.89	7.18	
POL-MW0035SI	6/26/2023	1353		18 to 23	3.66	18 to 23	
POL-MW0036I	6/26/2023	1409		25 to 30	9.22	12.33	
POL-MW0036SI	6/26/2023	1408		18 to 23	8.77	12.2	
POL-MW0039ID	6/26/2023	1440		32 to 37	5.74	8.91	
POL-MW0041SI	6/26/2023	1355		18 to 23	8.38	12.06	
POLMW0042SI	6/26/2023	1401		18 to 23	7.77	11.49	
POL-MW0043S	6/26/2023	1405		10 to 20	9.48		
POL-MW0043I	6/26/2023	1404		20 to 30	9.52		
POL-MW0043D	6/26/2023	1403		30 to 40	9.46		
POL-MW0044I	6/26/2023	1407		20 to 30	9.58		
POL-MW0044D	6/26/2023	1406		30 to 40	9.50		

Tetra Tech, Inc.

GROUNDWATER LEVEL MEASUREMENT SHEET

Project Name:	Paint and Oil Locker (POL) and SW3	**Project No.:**	112G09020
Location:	Kennedy Space Center (KSC), Florida	**Personnel:**	Aaron Kupper/Chuck Sorden
Weather Conditions:		**Measuring Device:**	InSitu WLM
Tidally Influenced:	**Yes ____ No __X__**	**Remarks:**	

Well or Piezometer Number	Date	Time	Top of Casing Elevation (feet)*	Screened Interval (feet bls)	Water Level Indicator Reading (feet)*	Groundwater Elevation (feet)*	Comments
POL-MW0045S	6/26/2023	1429		10 to 20	9.16		
POL-MW0045I	6/26/2023	1427		20 to 30	9.47		
POL-MW0045D	6/26/2023	1428		30 to 40	9.55		
POL-MW0046D	6/26/2023	1431		30 to 40	8.58		
POL-MW0046DD	6/26/2023	1432		40 to 50	8.71		
POL-MW0047I	6/26/2023	1433		20 to 30	7.93		
POL-MW0047D	6/26/2023	1434		30 to 40	7.97		
POL-MW0047DD	6/26/2023	1435		40 to 50	8.02		
POL-MW0048I	6/26/2023	1141		25 to 35	5.03		34.81 TD
POL-MW0048D	6/26/2023	1143		35 to 45	4.98		44.65 TD

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0008I**	SAMPLE ID: **POL-MW0008I-027.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.51	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
0.82 Liters. (0.0098 x 35) + 0.475 = 0.82

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1400	PURGING ENDED AT: 1414	TOTAL VOLUME PURGED (Liters): 2.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1406	1.2	1.2	200	5.59	6.54	28.3	2709	1.48	9.97	28.4	None
1408	0.4	1.6	200	5.59	6.57	28.0	2769	1.01	12.11	-3.1	-
1410	0.4	1.8	200	5.59	6.48	27.9	2829	0.61	10.40	-24.7	-
1412	0.4	2.2	200	5.59	6.53	27.8	2994	0.41	8.19	-37.5	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1414	SAMPLING ENDED AT: 1419
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE, S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0012S**	SAMPLE ID: **POL-MW0012S-013.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.73	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **11 to 16**	
WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **11**	BOTTOM DEPTH (feet bls): **16**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.61 Liters. (0.005 x 26) + 0.475 = 0.61

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.5	PURGING INITIATED AT: 15:18	PURGING ENDED AT: 15:34	TOTAL VOLUME PURGED (Liters): 3.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1528	2.0	2.0	200	5.42	4.97	28.5	106.0	0.16	11.80	116.4	None
15:30	0.4	2.4	200	5.47	4.93	28.1	105.7	0.14	12.96	117.1	-
15:32	0.4	2.8	200	5.47	4.90	28.2	102.6	0.14	11.0	119.6	-
15:34	0.4	3.2	200	5.48	4.89	28.2	102.7	0.13	11.07	119.3	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 15:35	SAMPLING ENDED AT: 15:40
PUMP OR TUBING DEPTH IN WELL (feet): 13.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL-MW0014ID**	SAMPLE ID: **POL-MW0014ID-034.5-20230707** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/07/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.83	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **32 to 37**

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **32**	BOTTOM DEPTH (feet bls): **37**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.71 Liters. (0.005 x 47) + 0.475 = 0.71

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 34.5	PURGING INITIATED AT: 08:46	PURGING ENDED AT: 8:56	TOTAL VOLUME PURGED (Liters): 1.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
8:52	1.2	1.2	200	4.89	6.27	26.0	768	0.23	3.59	-63.4	None
8:54	0.4	1.6	200	4.89	6.30	26.0	766	0.19	12.05	-73.2	-
8:56	0.4	1.8	200	4.89	6.32	25.9	766	0.18	5.30	-75.7	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri//Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 8:57	SAMPLING ENDED AT: 9:02

PUMP OR TUBING DEPTH IN WELL (feet): 34.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE

FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026I**	SAMPLE ID: **POL-MW0026I-027.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 3.43	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 12:45	PURGING ENDED AT: 12:58	TOTAL VOLUME PURGED (Liters): 2.6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1254	1.8	1.8	200	4.31	6.80	29.8	720	0.11	6.82	-79.6	None
1256	0.4	2.2	200	4.31	6.77	29.8	716	0.12	6.77	-78.4	-
1258	0.4	2.6	200	4.33	6.76	30.0	715	0.13	7.66	-78.0	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 13:00	SAMPLING ENDED AT: 13:05
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0026S**	SAMPLE ID: **POL-MW0026S-013.6-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.49	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **5 to 15**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **5**	BOTTOM DEPTH (feet bls): **15**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.58 Liters. (0.005 x 25) + 0.475 = 0.58

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 10	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 13.6	PURGING INITIATED AT: 1308	PURGING ENDED AT: 1332	TOTAL VOLUME PURGED (Liters): 0.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1315	0.7	0.7	100	14.90	5.10	31.5	508	1.15	>1000	154.6	Brown
1316	Purged dry										
1330	Continued purge										
1332	0.1	0.8	100	12.00	5.18	32.7	556	0.53	>1000	101.2	Brown
1333	Collect sample										
1338	Well dry after										

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION Natalie Volk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1333	SAMPLING ENDED AT: 1338
PUMP OR TUBING DEPTH IN WELL (feet): 13.6	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS: well purged dry at 100 mL/min in 10 mins. Recommend replacing well. Followed SOP guidelines

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL- MW0028I**	SAMPLE ID: **POL-MW0028I-027.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.78	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 25	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. (0.005 x 40) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 14:24	PURGING ENDED AT: 14:36	TOTAL VOLUME PURGED (Liters): 2.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
14:32	1.6	1.6	200	6.10	6.42	27.5	1116	0.19	8.39	-46.1	None
14:34	0.4	2.0	200	6.10	6.42	27.6	1118	0.16	8.39	-52.6	-
14:36	0.4	2.4	200	6.10	6.42	27.6	1114	0.19	14..6	-51.0	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 14:38	SAMPLING ENDED AT: 14:43
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE, S	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0028S**	SAMPLE ID: **POL-MW0028S-014.5-202307** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.99	CASING HEIGHT (feet als): 0.13	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 5.86	WELL SCREEN INTERVAL DEPTH (feet bls): **7 to 17**	
WELL DIAMETER (inches): 3/4	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 7	BOTTOM DEPTH (feet bls): **17**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

0.68 Liters (15-5.93)x.o76

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

Liters.

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 9	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 14.5	PURGING INITIATED AT: 14:45	PURGING ENDED AT: 1458	TOTAL VOLUME PURGED (Liters): 1.3

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1452	0.7	0.7	100	11.31	4.96	28.8	188.9	0.31	9.33	175.8	None
1454	0.2	0.9	100	11.90	4.62	29.1	247.5	0.26	7.88	208.0	-
1456	0.2	1.1	100	12.00	4.52	29.0	287.7	0.31	8.96	208.9	-
1458	0.2	1.3	100	12.10	4.47	29.1	224.8	0.35	8.65	224.8	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: NatalieVolk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1500	SAMPLING ENDED AT: 1505
PUMP OR TUBING DEPTH IN WELL (feet): 14.5	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type:	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	NONE	N/A	See above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCL	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:
Well ran dry. Waited for recharge and collected sample per FDEP 2200.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL-MW0035SI**	SAMPLE ID: **POL-MW0035SI-020.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.24	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 15:50	PURGING ENDED AT: 16:02	TOTAL VOLUME PURGED (Liters): 2.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
15:58	1.6	1.6	200	4.39	5.12	26.2	107.2	0.17	6.23	70.1	None
16:00	0.4	2.0	200	4.39	5.12	26.1	112.2	0.16	5.70	68.0	-
16:02	0.4	2.4	200	4.39	5.12	26.0	112.8	0.16	6.00	67.4	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 16:03	SAMPLING ENDED AT: 16:08
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0036I**	SAMPLE ID: **POL-MW0036I-027.5-20230705** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/05/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.97	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 30**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005+(0.005 x 39.0) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27.5	PURGING INITIATED AT: 1308	PURGING ENDED AT: 1319	TOTAL VOLUME PURGED (Liters): 2.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1315	1.4	1.4	200	10.00	5.58	28.0	4716	0.08	4.38	-60.4	none
1317	0.4	1.8	200	10.00	5.61	27.8	4713	0.09	5.77	-60.0	-
1319	0.4	2.2	200	10.00	5.63	27.8	4727	0.10	4.55	-60.1	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk /Tt	SAMPLER(S) SIGNATURES: Natalie Volk	SAMPLING INITIATED AT: 1320	SAMPLING ENDED AT: 1325
PUMP OR TUBING DEPTH IN WELL (feet): 27.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0036SI**	SAMPLE ID: **POL-MW0036SI-020.5-20230705** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/05/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.83	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 + (0.005 x 34) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1230	PURGING ENDED AT: 1244	TOTAL VOLUME PURGED (Liters): 2.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1236	1.2	1.2	200	9.52	3.34	27.4	3726	0.17	4.99	262.6	Clear
1238	0.4	1.6	200	9.52	3.36	27.5	3732	0.15	5.45	261.2	-
1240	0.4	2.0	200	9.52	3.37	27.8	3926	0.13	5.76	252.5	-
1242	0.4	2.4	200	9.52	3.37	27.8	3922	0.12	5.42	248.1	-
1244	0.4	2.8	200	9.52	3.37	27.7	3911	0.11	4.74	248.8	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk/ Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1245	SAMPLING ENDED AT: 1250
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **POL-MW0041SI**	SAMPLE ID: **POL-MW0041SI-020.5-20230705** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/05/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 9.01	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 + (0.005 x 34) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1510	PURGING ENDED AT: 1523	TOTAL VOLUME PURGED (Liters): 2.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1515	1.0	1.0	200	9.75	3.23	28.4	3458	0.12	5.97	290.0	none
1517	0.4	1.4	200	9.79	3.27	27.6	3424	0.09	5.44	267.7	-
1519	0.2	1.6	100	9.64	3.29	27.8	3425	0.10	7.34	255.3	-
1521	0.2	1.8	100	9.61	3.30	28.0	3416	0.09	6.70	247.9	-
1523	0.2	2.0	100	9.61	3.31	28.0	3431	0.09	6.59	237.3	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1524	SAMPLING ENDED AT: 1529
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL-MW0042SI**	SAMPLE ID: **POL-MW0042SI-020.5-20230705** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/05/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 8.31	CASING HEIGHT (feet als): 3.1	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **18 to 23**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **18**	BOTTOM DEPTH (feet bls): **23**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 + (0.005 x 34) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.5	PURGING INITIATED AT: 1545	PURGING ENDED AT: 1600	TOTAL VOLUME PURGED (Liters): 3.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1552	1.4	1.4	200	8.55	3.29	27.8	1271	0.07	6.21	64.7	none
1554	0.4	1.8	200	8.55	3.30	27.4	1268	0.07	5.17	50.9	-
1556	0.4	2.2	200	8.55	3.29	27.2	1263	0.07	5.73	44.9	-
1558	0.4	2.6	200	8.55	3.29	27.2	1261	0.07	5.83	35.3	-
1600	0.4	3.0	200	8.55	3.28	27.2	1259	0.07	6.51	31.5	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk /Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1601	SAMPLING ENDED AT: 1606
PUMP OR TUBING DEPTH IN WELL (feet): 20.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE, s	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS: Installed new HDPE tubing.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0043I**	SAMPLE ID: **POL-MW0043I-025.0-20230705** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/05/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.16	CASING HEIGHT (feet als): 2.5	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.66	WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **20**	BOTTOM DEPTH (feet bls): **30**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 + (0.005 x 39) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	PURGING INITIATED AT: 1620	PURGING ENDED AT: 1634	TOTAL VOLUME PURGED (Liters): 2.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
1628	1.6	1.6	200	10.81	3.10	27.9	2732	0.49	6.40	421.6	Clear
1630	0.4	2.0	200	10.81	3.09	28.2	2727	0.43	7.44	419.3	-
1632	0.4	2.4	200	10.81	3.10	28.2	2732	0.44	9.82	416.9	-
1634	0.4	2.8	200	10.81	3.10	28.2	2732	0.41	8.41	416.1	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie. Volk/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 1635	SAMPLING ENDED AT: 1640
PUMP OR TUBING DEPTH IN WELL (feet): 25.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0044D**	SAMPLE ID: **POL-MW0044D-035.0-20230707** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/07/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.07	CASING HEIGHT (feet als): 3.00	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.07	WELL SCREEN INTERVAL DEPTH (feet bls): **30 to 40**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **30**	BOTTOM DEPTH (feet bls): **40**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 (0.005 x 40)) + 0.475 = 0.68

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 35.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 35.0	9:40	PURGING ENDED AT: 9:52	TOTAL VOLUME PURGED (Liters): 2.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
9:48	1.6	1.6	200	10.10	5.95	28.1	2647	0.17	7.08	-40.9	none
9:50	0.4	2.0	200	10.10	5.99	28.1	2644	0.16	4.25	-43.3	-
9:52	0.4	2.4	200	10.10	6.00	28.2	2641	0.16	6.44	-44.2	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:53	SAMPLING ENDED AT: 9:58
PUMP OR TUBING DEPTH IN WELL (feet): 35.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0045I**	SAMPLE ID: **POL-MW0045I-025.0-20230707** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/07/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 10.05	CASING HEIGHT (feet als): 2.65	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): 7.4	WELL SCREEN INTERVAL DEPTH (feet bls): **20 to 30**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): 20	BOTTOM DEPTH (feet bls): 30

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.68 Liters. 0.005 + (0.005 x 39) + 0.475

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 25.0	PURGING INITIATED AT: 9:14	PURGING ENDED AT: 9:26	TOTAL VOLUME PURGED (Liters): 2.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
9:22	1.6	1.6	200	10.18	3.37	29.0	2436	1.89	6.48	174.6	None
9:24	0.4	2.0	200	10.18	3.32	29.0	2431	1.86	7.76	178.8	-
9:26	0.4	2.4	200	10.19	3.31	29.0	2427	1.85	5.48	173.0	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:27	SAMPLING ENDED AT: 9:32
PUMP OR TUBING DEPTH IN WELL (feet): 25.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: T	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP

REMARKS: DO high due to air sparging. Sampled per FDEP 2200.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0048D**	SAMPLE ID: **POL-MW0048D-040.0-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.68	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **35 to 45**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.73 Liters. 0.005 (0.005 x 55) + 0.475 = 0.73

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	PURGING INITIATED AT: 10:48	PURGING ENDED AT: 10:58	TOTAL VOLUME PURGED (Liters): 2.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
10:54	1.2	1.2	200	5.71	6.85	25.5	1078	0.24	11.63	-30.8	None
10:56	0.4	1.8	200	5.71	6.84	25.3	1069	0.23	10.14	-29.4	-
10:58	0.4	2.2	200	5.71	6.83	25.3	1066	0.23	9.19	-28.9	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 10:59	SAMPLING ENDED AT: 11:04
PUMP OR TUBING DEPTH IN WELL (feet): 40.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Paint and Oil Locker (POL)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **POL- MW0048I**	SAMPLE ID: **POL-MW0048I-030.0-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: **07/06/2023**

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.75	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 35**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **35**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.70 Liters. (0.005 x 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.0	PURGING INITIATED AT: 10:30	PURGING ENDED AT: 10:40	TOTAL VOLUME PURGED (Liters): 2.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
10:36	1.2	1.2	200	5.76	6.83	25.5	1036	0.31	6.74	3.4	None
10:38	0.4	1.6	200	5.76	6.74	25.5	1047	0.27	7.02	4.2	-
10:40	0.4	2.0	200	5.76	6.73	25.3	1038	0.25	6.81	3.7	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: NatalieVolk & Fabbri /Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 10:41	SAMPLING ENDED AT: 10:46
PUMP OR TUBING DEPTH IN WELL (feet): 30.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **SW3-MW0029**	SAMPLE ID: **SW3-MW0029-020.0-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.18	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **15 to 25**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **15**	BOTTOM DEPTH (feet bls): **25**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.65 Liters. 0.005 (0.005 x 35) + 0.475 = 0.65

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 20.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 20.0	PURGING INITIATED AT: 9:32	PURGING ENDED AT: 9:52	TOTAL VOLUME PURGED (Liters): 2.0

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
9:48	1.6	1.6	100	6.26	6.64	25.3	640	0.45	6.82	-43.1	None
9:50	0.2	1.8	100	6.26	6.62	25.5	644	0.45	5.87	-44.1	-
9:52	0.2	2.0	100	6.26	6.62	25.3	634	0.46	6.09	-44.2	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:53	SAMPLING ENDED AT: 9:58
PUMP OR TUBING DEPTH IN WELL (feet): 20.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **SW3-MW0030**	SAMPLE ID: **SW3-MW0030-040.0-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.18	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **35 to 45**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.75 Liters. 0.005 (0.005 x 55) + 0.475 = 0.75

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	PURGING INITIATED AT: 9:04	PURGING ENDED AT: 9:18	TOTAL VOLUME PURGED (Liters): 2.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
9:12	1.6	1.6	200	6.34	6.93	26.8	1806	0.49	9.22	-35.9	None
9:14	0.4	2.0	200	6.34	6.92	27.0	1805	0.48	10.64	-36.9	-
9.16	0.4	2.4	200	6.34	6.92	27.1	1805	0.49	8.43	-37.4	-
9:18	0.4	2.8	209	6.34	6.92	27.0	1803	0.48	7.40	-37.6	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 9:19	SAMPLING ENDED AT: 9:24
PUMP OR TUBING DEPTH IN WELL (feet): 40.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **SW3-MW0031**	SAMPLE ID: **SW3-MW0031-047.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 6.40	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **45 to 50**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **45**	BOTTOM DEPTH (feet bls): **50**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.78 Liters. 0.005 (0.005 x 60) + 0.475 = 0.78

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 8:40	PURGING ENDED AT: 8:52	TOTAL VOLUME PURGED (Liters): 2.4

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
8:48	1.6	1.6	200	6.55	6.94	26.3	2051	0.48	8.04	-65.5	None
8:50	0.4	2.0	200	6.55	6.93	26.3	2039	0.47	7.71	-66.1	-
8:52	0.4	2.4	200	6.55	6.93	26.2	2029	0.46	5.97	-66	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Fabbri & Volk / Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 8:53	SAMPLING ENDED AT: 8:58
PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **SW3-MW0032**	SAMPLE ID: **SW3-MW0032-047.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 5.17	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **45 to 50**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **45**	BOTTOM DEPTH (feet bls): **50**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.78 Liters. 0.005 (0.005 x 60) + 0.475 = 0.78

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 08:10	PURGING ENDED AT: 8:24	TOTAL VOLUME PURGED (Liters): 2.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
8:20	2	2	200	5.22	6.87	25.0	1135	0.56	8.71	-84.3	None
8:22	0.4	2.4	200	5.22	6.85	25.0	1126	0.52	6.92	-84.0	-
8:24	0.4	2.8	200	5.22	6.85	25.2	1124	0.52	6.60	-83.5	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 8:25	SAMPLING ENDED AT: 8:30
PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**		SITE LOCATION: **Kennedy Space Center (KSC), FL**
LOCATION ID: **SW3-MW0033**	SAMPLE ID: **SW3-MW0033-030.0-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.61	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **25 to 35**

WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **25**	BOTTOM DEPTH (feet bls): **35**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.70 Liters. (0.005 x 45) + 0.475 = 0.70

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 30.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 30.0	PURGING INITIATED AT: 12:04	PURGING ENDED AT: 12:20	TOTAL VOLUME PURGED (Liters): 3.2

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (^{O}C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
12:16	2.4	2.4	200	4.65	6.93	25.8	554	0.18	11.94	20.2	None
12:18	0.4	2.8	200	4.65	6.95	25.8	547	0.16	11.15	14.9	-
12:20	0.4	3.2	200	4.65	6.94	26.0	548	0.15	11.83	14.7	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES: 	SAMPLING INITIATED AT: 1221	SAMPLING ENDED AT: 1226
PUMP OR TUBING DEPTH IN WELL (feet): 30.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **SW3-MW0034**	SAMPLE ID: **SW3-MW0034-040.0-20230627** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.61	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **35 to 45**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **35**	BOTTOM DEPTH (feet bls): **45**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.75 Liters. 0.005 (0.005 x 55) + 0.475 = 0.75

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 40.0	PURGING INITIATED AT: 11:36	PURGING ENDED AT: 11:54	TOTAL VOLUME PURGED (Liters): 3.6

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
11:50	2.8	2.8	200	4.63	6.89	25.3	1174	0.18	12.82	-14.3	None
11:52	0.4	3.2	200	4.63	6.88	25.3	1177	0.16	10.25	-15	-
11:54	0.4	3.6	200	4.63	6.87	25.3	1172	0.17	10.05	-15.7	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 11:55	SAMPLING ENDED AT: 12:00
PUMP OR TUBING DEPTH IN WELL (feet): 40.0	SAMPLE PUMP FLOW RATE (mL per minute): 200	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

Tetra Tech NUS / FDEP Groundwater Sampling Sheet

SITE NAME: **Supply Warehouse #3 (SW3)**	SITE LOCATION: **Kennedy Space Center (KSC), FL**	
LOCATION ID: **SW3-MW0035**	SAMPLE ID: **SW3-MW0035-047.5-20230706** Sample depth (ddd.d)=[bottom of screen (feet bls)-Top depth] x 0.5-bottom of screen (feet bls)	DATE: 07/06/2023

PURGING DATA

STATIC DEPTH TO WATER (feet btoc): 4.89	CASING HEIGHT (feet als): NA	STATIC DEPTH TO WATER (feet bls) = DTW (btoc) - Casing Height (feet als): NA	WELL SCREEN INTERVAL DEPTH (feet bls): **45 to 50**	
WELL DIAMETER (inches): 1	TUBING DIAMETER (inches): **3/16**	PURGE PUMP TYPE OR BAILER: **Peristaltic Pump**	TOP DEPTH = top of screen or depth to water which ever is greatest (feet bls): **45**	BOTTOM DEPTH (feet bls): **50**

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)

_____Liters

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)

0.78 Liters. 0.005 (0.005 x 60) + 0.475 = 0.78

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 47.5	PURGING INITIATED AT: 11:15	PURGING ENDED AT: 11:28	TOTAL VOLUME PURGED (Liters): 1.8

TIME	VOLUME PURGED (Liters)	CUMUL. VOLUME PURGED (Liters)	PURGE RATE (mlpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (µS/cm)	DISSOLVED OXYGEN (mg/L)	TURBIDITY (NTUs)	ORP (mV)	COLOR (describe)
11:20	1.0	1.0	200	6.40	7.06	26.3	1957	1.14	10.97	-39.9	None
11:22	0.2	1.2	100	6.33	6.98	26.8	2572	0.67	11.25	-44.8	-
11:24	0.2	1.4	100	6.33	6.94	26.9	2668	0.47	9.26	-46.9	-
11:26	0.2	1.6	100	6.33	6.93	26.9	2711	0.36	9.81	-50.0	-
11:28	0.2	1.8	100	6.35	6.93	26.9	2716	0.30	9.85	-51.0	-

WELL CAPACITY (Liters Per Foot): **0.75"** = 0.076; **1"** = 0.15; **1.25"** = 0.23; **2"** = 0.61; **3"** = 1.40; **4"** = 2.46; **5"** = 3.86; **6"** = 5.57; **12"** = 22.26
TUBING INSIDE DIA. CAPACITY (Liters/Ft.): **1/8"** = 0.002; **3/16"** = 0.005; **1/4"** = 0.0098; **5/16"** = 0.015; **3/8"** = 0.023; **1/2"** = 0.038; **5/8"** = 0.09

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Natalie Volk & Fabbri/Tt	SAMPLER(S) SIGNATURES:	SAMPLING INITIATED AT: 11:30	SAMPLING ENDED AT: 11:35
PUMP OR TUBING DEPTH IN WELL (feet): 47.5	SAMPLE PUMP FLOW RATE (mL per minute): 100	TUBING MATERIAL CODE: HDPE	
FIELD DECONTAMINATION: **(Y)** N	FIELD-FILTERED: Y **(N)** FILTER SIZE: ____ µm Filtration Equipment Type: _____	DUPLICATE: Y **(N)**	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		
1	2	CG	40 mL	HCl/4°C	N/A	<2	8260 (MOD) POL Custom List	APP
2	2	CG	40 mL	4°C	N/A	See Above	8260 (MOD) POL Custom List	APP

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING/PURGING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP =** Peristaltic Pump **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **VT** = Vacuum Trap; **O** = Other (Specify)

APPENDIX C

LABORATORY ANALYTICAL REPORTS

National Aeronautics and
Space Administration

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Signature

2/21/2023

Date

Company Name: Eurofins Environment Testing Southeast
Company Representative Name: Matthew Foti
Company Representative Title: Business Unit Manager
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Company Representative Phone: 407-421-6224
Company Representative E-Mail: matthew.foti@et.eurofinsus.com

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island Florida 32953

Generated 11/18/2022 2:12:35 PM

JOB DESCRIPTION

NASA KSC POL / SW3

JOB NUMBER

670-7456-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

my EOL

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
Q	Sample held beyond the accepted holding time.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected at or above the method detection limit in both the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-7456-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-7456-1

Receipt
The samples were received on 10/14/2022 2:20 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C

GC/MS VOA
Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 670-8827 recovered outside control limits for the following analytes: Acetone. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260B: The continuing calibration verification (CCV) associated with batch 670-10297 recovered outside acceptance criteria, low biased, for Acetone. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260B: The continuing calibration verification (CCV) associated with batch 670-10297 recovered above the upper control limit for Toluene, Chloroform, Methylene Chloride and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCVIS 670-10297/3).

Method 8260B: The laboratory control sample (LCS) for analytical batch 670-10297 recovered outside control limits for the following analytes: Acetone. A low-level LCS (LLCS), spiked at the reporting limit (RL), was prepared with this batch. The affected target analytes recovered within acceptance limits; therefore, the LLCS demonstrates the analytical system had sufficient sensitivity to detect the compounds had they been present. Since the affected target compounds were not detected in the samples, the data have been reported and qualified.

Method 8260B: Due to system error, the following sample was analyzed outside of analytical holding time: POL-MW0026S-013.6-20221013 (670-7456-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Client Sample ID: POL-MW0014ID-034.5-20221012 — Lab Sample ID: 670-7456-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.57	I	1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0035SI-020.5-20221012 — Lab Sample ID: 670-7456-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.9		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0012S-013.5-20221012 — Lab Sample ID: 670-7456-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	28		1.0	0.50	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	2.4		1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene	2.0		1.0	0.50	ug/L	1		8260B	Total/NA
Vinyl chloride	17		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0028I-027.5-20221013 — Lab Sample ID: 670-7456-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.71	I	1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0028S-011.9-20221013 — Lab Sample ID: 670-7456-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.93	I	1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene	1.1		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0026II-027.5-20221013 — Lab Sample ID: 670-7456-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.2		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: POL-MW0026S-013.6-20221013 — Lab Sample ID: 670-7456-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	100	Q	5.0	2.5	ug/L	5		8260B	Total/NA
Methylene Chloride	34	I Q V	50	25	ug/L	5		8260B	Total/NA
Toluene	3.0	I Q	5.0	2.5	ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	6.1	Q	5.0	2.5	ug/L	5		8260B	Total/NA
Vinyl chloride	11	Q	5.0	2.5	ug/L	5		8260B	Total/NA

Client Sample ID: POL-MW0033SI-020.5-20221013 — Lab Sample ID: 670-7456-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	3.4		1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	22		1.0	0.50	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	17		1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene	76		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: SW3-MW0009-020.0-20221013 — Lab Sample ID: 670-7456-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.80	I	1.0	0.50	ug/L	1		8260B	Total/NA
Vinyl chloride	0.77	I	1.0	0.50	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: POL-MW0014ID-034.5-20221012
Lab Sample ID: 670-7456-1

Date Collected: 10/13/22 13:20
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/23/22 23:50	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/23/22 23:50	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/23/22 23:50	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/23/22 23:50	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/23/22 23:50	1
Acetone	20	U J3	20	20	ug/L			10/23/22 23:50	1
Benzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/23/22 23:50	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
cis-1,2-Dichloroethene	**0.57**	**I**	1.0	0.50	ug/L			10/23/22 23:50	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/23/22 23:50	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Styrene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Toluene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/23/22 23:50	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/23/22 23:50	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/23/22 23:50	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/23/22 23:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/23/22 23:50*	*1*

Client Sample ID: POL-MW0014ID-034.5-20221012
Lab Sample ID: 670-7456-1
Date Collected: 10/13/22 13:20
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/23/22 23:50*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/23/22 23:50*	*1*

Client Sample ID: POL-MW0035SI-020.5-20221012
Lab Sample ID: 670-7456-2
Date Collected: 10/13/22 14:00
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 00:07	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 00:07	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 00:07	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 00:07	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 00:07	1
Acetone	20	U J3	20	20	ug/L			10/24/22 00:07	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 00:07	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
cis-1,2-Dichloroethene	**1.9**		1.0	0.50	ug/L			10/24/22 00:07	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 00:07	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1

Client Sample ID: POL-MW0035SI-020.5-20221012
Lab Sample ID: 670-7456-2

Date Collected: 10/13/22 14:00
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 00:07	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:07	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 00:07	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/24/22 00:07*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/24/22 00:07*	*1*
Dibromofluoromethane (Surr)	*92*		*80 - 120*		*10/24/22 00:07*	*1*

Client Sample ID: POL-MW0012S-013.5-20221012
Lab Sample ID: 670-7456-3

Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 00:24	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 00:24	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 00:24	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 00:24	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 00:24	1
Acetone	20	U J3	20	20	ug/L			10/24/22 00:24	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 00:24	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
cis-1,2-Dichloroethene	**28**		1.0	0.50	ug/L			10/24/22 00:24	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1

Client Sample ID: POL-MW0012S-013.5-20221012
Lab Sample ID: 670-7456-3
Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 00:24	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
trans-1,2-Dichloroethene	**2.4**		1.0	0.50	ug/L			10/24/22 00:24	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Trichloroethene	**2.0**		1.0	0.50	ug/L			10/24/22 00:24	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Vinyl chloride	**17**		1.0	0.50	ug/L			10/24/22 00:24	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 00:24	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:24	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 00:24	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/24/22 00:24*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/24/22 00:24*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/24/22 00:24*	*1*

Client Sample ID: POL-MW0028I-027.5-20221013
Lab Sample ID: 670-7456-4
Date Collected: 10/13/22 10:20
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 00:41	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 00:41	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 00:41	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 00:41	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 00:41	1
Acetone	20	U J3	20	20	ug/L			10/24/22 00:41	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1

Client Sample ID: POL-MW0028I-027.5-20221013

Lab Sample ID: 670-7456-4

Date Collected: 10/13/22 10:20

Matrix: Water

Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 00:41	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
cis-1,2-Dichloroethene	**0.71**	**I**	1.0	0.50	ug/L			10/24/22 00:41	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 00:41	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 00:41	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:41	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 00:41	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/24/22 00:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/24/22 00:41*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/24/22 00:41*	*1*

Client Sample ID: POL-MW0028S-011.9-20221013

Lab Sample ID: 670-7456-5

Date Collected: 10/13/22 10:45

Matrix: Water

Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 00:58	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 00:58	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 00:58	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 00:58	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 00:58	1

Client Sample ID: POL-MW0028S-011.9-20221013
Lab Sample ID: 670-7456-5

Date Collected: 10/13/22 10:45
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U J3	20	20	ug/L			10/24/22 00:58	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 00:58	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
cis-1,2-Dichloroethene	**0.93**	**I**	1.0	0.50	ug/L			10/24/22 00:58	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 00:58	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Trichloroethene	**1.1**		1.0	0.50	ug/L			10/24/22 00:58	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 00:58	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:58	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 00:58	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/24/22 00:58*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/24/22 00:58*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/24/22 00:58*	*1*

Client Sample ID: POL-MW0026II-027.5-20221013
Lab Sample ID: 670-7456-6

Date Collected: 10/13/22 11:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 01:15	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Client Sample ID: POL-MW0026II-027.5-20221013
Date Collected: 10/13/22 11:50
Date Received: 10/14/22 14:20

Lab Sample ID: 670-7456-6
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 01:15	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 01:15	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 01:15	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 01:15	1
Acetone	20	U J3	20	20	ug/L			10/24/22 01:15	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 01:15	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
cis-1,2-Dichloroethene	**2.2**		1.0	0.50	ug/L			10/24/22 01:15	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 01:15	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 01:15	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:15	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 01:15	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*80 - 120*		*10/24/22 01:15*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/24/22 01:15*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/24/22 01:15*	*1*

Client Sample ID: POL-MW0026S-013.6-20221013
Date Collected: 10/13/22 12:50
Date Received: 10/14/22 14:20

Lab Sample ID: 670-7456-7
Matrix: Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,1,2,2-Tetrachloroethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,1,2-Trichloro-1,2,2-trifluoroethane	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
1,1,2-Trichloroethane	2.5	U Q	10	2.5	ug/L			11/05/22 17:12	5
1,1-Dichloroethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,1-Dichloroethene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,2,4-Trichlorobenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,2-Dibromo-3-Chloropropane	0.50	U Q	50	0.50	ug/L			11/05/22 17:12	5
1,2-Dibromoethane (EDB)	0.50	U Q	60	0.50	ug/L			11/05/22 17:12	5
1,2-Dichloroethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
1,2-Dichloropropane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
2-Butanone (MEK)	25	U Q	50	25	ug/L			11/05/22 17:12	5
2-Hexanone	5.0	U Q	100	5.0	ug/L			11/05/22 17:12	5
Acetone	130	U Q J3	250	130	ug/L			11/05/22 17:12	5
Benzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Bromodichloromethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Bromoform	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Bromomethane	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
Carbon disulfide	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
Carbon tetrachloride	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Chlorobenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Chloroethane	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
Chloroform	2.5	U Q	25	2.5	ug/L			11/05/22 17:12	5
Chloromethane	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
cis-1,2-Dichloroethene	**100**	**Q**	5.0	2.5	ug/L			11/05/22 17:12	5
cis-1,3-Dichloropropene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Dibromochloromethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Dichlorodifluoromethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Ethylbenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Isopropylbenzene	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
m-Dichlorobenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Methyl tert-butyl ether	5.0	U Q	10	5.0	ug/L			11/05/22 17:12	5
Methylene Chloride	**34**	**I Q V**	50	25	ug/L			11/05/22 17:12	5
o-Dichlorobenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
para-Dichlorobenzene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Styrene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Tetrachloroethene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Toluene	**3.0**	**I Q**	5.0	2.5	ug/L			11/05/22 17:12	5
trans-1,2-Dichloroethene	**6.1**	**Q**	5.0	2.5	ug/L			11/05/22 17:12	5
trans-1,3-Dichloropropene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Trichloroethene	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Trichlorofluoromethane	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Vinyl chloride	**11**	**Q**	5.0	2.5	ug/L			11/05/22 17:12	5
Xylenes, Total	2.5	U Q	5.0	2.5	ug/L			11/05/22 17:12	5
Cyclohexane	2.5	U Q	25	2.5	ug/L			11/05/22 17:12	5
Methyl acetate	2.5	U Q	50	2.5	ug/L			11/05/22 17:12	5
Methylcyclohexane	2.5	U Q	25	2.5	ug/L			11/05/22 17:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*11/05/22 17:12*	*5*

Client Sample ID: POL-MW0026S-013.6-20221013
Lab Sample ID: 670-7456-7

Date Collected: 10/13/22 12:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*		*11/05/22 17:12*	*5*
Dibromofluoromethane (Surr)	*101*		*80 - 120*		*11/05/22 17:12*	*5*

Client Sample ID: POL-MW0033SI-020.5-20221013
Lab Sample ID: 670-7456-8

Date Collected: 10/13/22 14:15
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 01:32	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
1,1-Dichloroethene	**3.4**		1.0	0.50	ug/L			10/24/22 01:32	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 01:32	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 01:32	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 01:32	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 01:32	1
Acetone	20	U J3	20	20	ug/L			10/24/22 01:32	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 01:32	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
cis-1,2-Dichloroethene	**22**		1.0	0.50	ug/L			10/24/22 01:32	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 01:32	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
trans-1,2-Dichloroethene	**17**		1.0	0.50	ug/L			10/24/22 01:32	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1

Client Sample ID: POL-MW0033SI-020.5-20221013
Lab Sample ID: 670-7456-8

Date Collected: 10/13/22 14:15
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**76**		1.0	0.50	ug/L			10/24/22 01:32	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 01:32	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:32	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 01:32	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:32	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/24/22 01:32*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/24/22 01:32*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/24/22 01:32*	*1*

Client Sample ID: SW3-MW0009-020.0-20221013
Lab Sample ID: 670-7456-9

Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 01:49	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 01:49	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 01:49	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 01:49	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 01:49	1
Acetone	20	U J3	20	20	ug/L			10/24/22 01:49	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 01:49	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
cis-1,2-Dichloroethene	**0.80**	**I**	1.0	0.50	ug/L			10/24/22 01:49	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1

Client: Tetra Tech, Inc.
Job ID: 670-7456-1
Project/Site: NASA KSC POL / SW3

Client Sample ID: SW3-MW0009-020.0-20221013
Lab Sample ID: 670-7456-9
Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 01:49	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Vinyl chloride	**0.77**	**I**	1.0	0.50	ug/L			10/24/22 01:49	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 01:49	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:49	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 01:49	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*80 - 120*		*10/24/22 01:49*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/24/22 01:49*	*1*
Dibromofluoromethane (Surr)	*91*		*80 - 120*		*10/24/22 01:49*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)
670-7456-1	POL-MW0014ID-034.5-20221012	97	102	94
670-7456-2	POL-MW0035SI-020.5-20221012	97	102	92
670-7456-3	POL-MW0012S-013.5-20221012	97	104	93
670-7456-4	POL-MW0028I-027.5-20221013	97	102	94
670-7456-5	POL-MW0028S-011.9-20221013	98	102	93
670-7456-6	POL-MW0026II-027.5-20221013	96	103	94
670-7456-7	POL-MW0026S-013.6-20221013	98	108	101
670-7456-8	POL-MW0033SI-020.5-20221013	98	103	94
670-7456-9	SW3-MW0009-020.0-20221013	102	103	91
670-8409-C-1 MS	Matrix Spike	98	98	98
LCS 670-10297/4	Lab Control Sample	98	99	103
LCS 670-8827/4	Lab Control Sample	97	104	92
LCSD 670-8827/5	Lab Control Sample Dup	97	101	92
MB 670-10297/6	Method Blank	101	99	105
MB 670-8827/7	Method Blank	98	106	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-10297/6
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			11/05/22 13:03	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			11/05/22 13:03	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			11/05/22 13:03	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			11/05/22 13:03	1
2-Hexanone	1.0	U	20	1.0	ug/L			11/05/22 13:03	1
Acetone	25	U	50	25	ug/L			11/05/22 13:03	1
Benzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Bromoform	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Bromomethane	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Chloroethane	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
Chloroform	0.607	I	5.0	0.50	ug/L			11/05/22 13:03	1
Chloromethane	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			11/05/22 13:03	1
Methylene Chloride	6.14	I	10	5.0	ug/L			11/05/22 13:03	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Styrene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Toluene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			11/05/22 13:03	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			11/05/22 13:03	1
Methyl acetate	0.50	U	10	0.50	ug/L			11/05/22 13:03	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			11/05/22 13:03	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-10297/6
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		11/05/22 13:03	1
4-Bromofluorobenzene (Surr)	99		80 - 120		11/05/22 13:03	1
Dibromofluoromethane (Surr)	105		80 - 120		11/05/22 13:03	1

Lab Sample ID: LCS 670-10297/4
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	20.4		ug/L		102	50 - 150
1,1,2,2-Tetrachloroethane	20.0	20.8		ug/L		104	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	20.4		ug/L		102	50 - 150
1,1,2-Trichloroethane	20.0	20.8		ug/L		104	50 - 150
1,1-Dichloroethane	20.0	20.3		ug/L		102	50 - 150
1,1-Dichloroethene	20.0	20.4		ug/L		102	50 - 150
1,2,4-Trichlorobenzene	20.0	22.2		ug/L		111	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	18.0		ug/L		90	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.8		ug/L		99	50 - 150
1,2-Dichloroethane	20.0	20.4		ug/L		102	50 - 150
1,2-Dichloropropane	20.0	21.9		ug/L		109	50 - 150
2-Butanone (MEK)	200	185		ug/L		92	50 - 150
2-Hexanone	200	193		ug/L		97	50 - 150
Acetone	200	25	U J3	ug/L		0	50 - 150
Benzene	20.0	20.6		ug/L		103	50 - 150
Bromodichloromethane	20.0	20.9		ug/L		104	70 - 130
Bromoform	20.0	20.3		ug/L		102	50 - 130
Bromomethane	20.0	21.5		ug/L		107	50 - 150
Carbon disulfide	20.0	20.8		ug/L		104	50 - 150
Carbon tetrachloride	20.0	21.4		ug/L		107	50 - 150
Chlorobenzene	20.0	20.9		ug/L		104	50 - 150
Chloroethane	20.0	19.0		ug/L		95	50 - 150
Chloroform	20.0	20.6		ug/L		103	50 - 150
Chloromethane	20.0	21.5		ug/L		108	50 - 150
cis-1,2-Dichloroethene	20.0	20.1		ug/L		101	50 - 150
cis-1,3-Dichloropropene	20.0	20.8		ug/L		104	50 - 150
Dibromochloromethane	20.0	20.3		ug/L		102	50 - 150
Dichlorodifluoromethane	20.0	24.5		ug/L		122	35 - 155
Ethylbenzene	20.0	20.5		ug/L		103	50 - 150
Isopropylbenzene	20.0	20.0		ug/L		100	50 - 150
m-Dichlorobenzene	20.0	21.8		ug/L		109	50 - 150
Methyl tert-butyl ether	20.0	19.6		ug/L		98	60 - 140
Methylene Chloride	20.0	27.8	V	ug/L		139	50 - 150
o-Dichlorobenzene	20.0	22.1		ug/L		111	50 - 150
para-Dichlorobenzene	20.0	22.0		ug/L		110	50 - 150
Styrene	20.0	19.7		ug/L		98	50 - 150
Tetrachloroethene	20.0	19.4		ug/L		97	50 - 150
Toluene	20.0	22.4		ug/L		112	50 - 150
trans-1,2-Dichloroethene	20.0	20.0		ug/L		100	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-10297/4
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,3-Dichloropropene	20.0	20.1		ug/L		100	50 - 150
Trichloroethene	20.0	19.6		ug/L		98	50 - 150
Trichlorofluoromethane	20.0	23.5		ug/L		118	50 - 150
Vinyl chloride	20.0	21.7		ug/L		109	50 - 150
Xylenes, Total	40.0	39.5		ug/L		99	50 - 150
Cyclohexane	20.0	18.9		ug/L		94	50 - 150
Methyl acetate	40.0	35.2		ug/L		88	50 - 150
Methylcyclohexane	20.0	19.2		ug/L		96	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*
Dibromofluoromethane (Surr)	*103*		*80 - 120*

Lab Sample ID: 670-8409-C-1 MS
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.000		20.0	22.3		ug/L		112	50 - 150
1,1,2,2-Tetrachloroethane	0.000		20.0	21.3		ug/L		107	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	0.000		20.0	23.4		ug/L		117	50 - 150
1,1,2-Trichloroethane	0.000		20.0	21.7		ug/L		108	50 - 150
1,1-Dichloroethane	0.000		20.0	22.6		ug/L		113	50 - 150
1,1-Dichloroethene	0.000		20.0	23.5		ug/L		117	50 - 150
1,2,4-Trichlorobenzene	0.000		20.0	20.1		ug/L		100	50 - 150
1,2-Dibromo-3-Chloropropane	0.000		20.0	17.1		ug/L		85	50 - 150
1,2-Dibromoethane (EDB)	0.000		20.0	20.5		ug/L		103	50 - 150
1,2-Dichloroethane	0.000		20.0	21.0		ug/L		105	50 - 150
1,2-Dichloropropane	0.000		20.0	22.4		ug/L		112	50 - 150
2-Butanone (MEK)	0.000		200	191		ug/L		95	50 - 150
2-Hexanone	0.000		200	208		ug/L		104	50 - 150
Acetone	0.000		200	25	U J3	ug/L		0	50 - 150
Benzene	0.000		20.0	22.1		ug/L		111	50 - 150
Bromodichloromethane	0.000		20.0	21.7		ug/L		109	70 - 130
Bromoform	0.000		20.0	20.2		ug/L		101	50 - 130
Bromomethane	0.000		20.0	26.5		ug/L		132	50 - 150
Carbon disulfide	0.000		20.0	23.7		ug/L		119	50 - 150
Carbon tetrachloride	0.000		20.0	22.2		ug/L		111	50 - 150
Chlorobenzene	0.000		20.0	21.5		ug/L		108	50 - 150
Chloroethane	0.000		20.0	20.0		ug/L		100	50 - 150
Chloroform	0.000		20.0	22.4		ug/L		112	50 - 150
Chloromethane	0.000		20.0	24.9		ug/L		125	50 - 150
cis-1,2-Dichloroethene	0.000		20.0	20.9		ug/L		105	50 - 150
cis-1,3-Dichloropropene	0.000		20.0	20.7		ug/L		104	50 - 150
Dibromochloromethane	0.000		20.0	20.8		ug/L		104	50 - 150
Dichlorodifluoromethane	0.000		20.0	27.5		ug/L		137	35 - 155
Ethylbenzene	0.000		20.0	21.8		ug/L		109	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-8409-C-1 MS
Matrix: Water
Analysis Batch: 10297

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Isopropylbenzene	0.000		20.0	21.6		ug/L		108	50 - 150
m-Dichlorobenzene	0.000		20.0	22.1		ug/L		110	50 - 150
Methyl tert-butyl ether	0.000		20.0	20.1		ug/L		101	60 - 140
Methylene Chloride	0.000		20.0	20.5	V	ug/L		102	50 - 150
o-Dichlorobenzene	0.000		20.0	19.9		ug/L		99	50 - 150
para-Dichlorobenzene	0.000		20.0	21.7		ug/L		108	50 - 150
Styrene	0.000		20.0	19.6		ug/L		98	50 - 150
Tetrachloroethene	0.000		20.0	22.3		ug/L		111	50 - 150
Toluene	0.000		20.0	22.0		ug/L		110	50 - 150
trans-1,2-Dichloroethene	0.000		20.0	22.8		ug/L		114	50 - 150
trans-1,3-Dichloropropene	0.000		20.0	21.4		ug/L		107	50 - 150
Trichloroethene	0.000		20.0	21.1		ug/L		105	50 - 150
Trichlorofluoromethane	0.000		20.0	25.4		ug/L		127	50 - 150
Vinyl chloride	0.000		20.0	24.1		ug/L		120	50 - 150
Xylenes, Total	0.000		40.0	42.1		ug/L		105	50 - 150
Cyclohexane	0.000		20.0	21.9		ug/L		110	50 - 150
Methyl acetate	0.000		40.0	37.8		ug/L		94	50 - 150
Methylcyclohexane	0.000		20.0	22.1		ug/L		111	50 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*98*		*80 - 120*

Lab Sample ID: MB 670-8827/7
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/23/22 22:42	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/23/22 22:42	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/23/22 22:42	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/23/22 22:42	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/23/22 22:42	1
Acetone	155		20	20	ug/L			10/23/22 22:42	1
Benzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-8827/7
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/23/22 22:42	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/23/22 22:42	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Styrene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Toluene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/23/22 22:42	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/23/22 22:42	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/23/22 22:42	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/23/22 22:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/23/22 22:42*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*10/23/22 22:42*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/23/22 22:42*	*1*

Lab Sample ID: LCS 670-8827/4
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	17.7		ug/L		89	50 - 150
1,1,2,2-Tetrachloroethane	20.0	25.7		ug/L		128	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	17.7		ug/L		88	50 - 150
1,1,2-Trichloroethane	20.0	23.1		ug/L		116	50 - 150
1,1-Dichloroethane	20.0	21.9		ug/L		110	50 - 150
1,1-Dichloroethene	20.0	19.9		ug/L		99	50 - 150
1,2,4-Trichlorobenzene	20.0	21.3		ug/L		106	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	19.0		ug/L		95	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.1		ug/L		101	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-8827/4
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	20.0	19.5		ug/L		98	50 - 150
1,2-Dichloropropane	20.0	23.8		ug/L		119	50 - 150
2-Butanone (MEK)	200	199		ug/L		100	50 - 150
2-Hexanone	200	203		ug/L		102	50 - 150
Acetone	200	337	J3	ug/L		168	50 - 150
Benzene	20.0	23.0		ug/L		115	50 - 150
Bromodichloromethane	20.0	20.1		ug/L		101	70 - 130
Bromoform	20.0	20.5		ug/L		103	50 - 130
Bromomethane	20.0	14.5		ug/L		73	50 - 150
Carbon disulfide	20.0	21.0		ug/L		105	50 - 150
Carbon tetrachloride	20.0	17.8		ug/L		89	50 - 150
Chlorobenzene	20.0	22.4		ug/L		112	50 - 150
Chloroethane	20.0	24.2		ug/L		121	50 - 150
Chloroform	20.0	19.2		ug/L		96	50 - 150
Chloromethane	20.0	22.2		ug/L		111	50 - 150
cis-1,2-Dichloroethene	20.0	21.8		ug/L		109	50 - 150
cis-1,3-Dichloropropene	20.0	21.5		ug/L		108	50 - 150
Dibromochloromethane	20.0	18.9		ug/L		94	50 - 150
Dichlorodifluoromethane	20.0	23.5		ug/L		117	35 - 155
Ethylbenzene	20.0	22.4		ug/L		112	50 - 150
Isopropylbenzene	20.0	22.6		ug/L		113	50 - 150
m-Dichlorobenzene	20.0	23.0		ug/L		115	50 - 150
Methyl tert-butyl ether	20.0	19.4		ug/L		97	60 - 140
Methylene Chloride	20.0	21.4		ug/L		107	50 - 150
o-Dichlorobenzene	20.0	23.6		ug/L		118	50 - 150
para-Dichlorobenzene	20.0	23.0		ug/L		115	50 - 150
Styrene	20.0	22.7		ug/L		114	50 - 150
Tetrachloroethene	20.0	19.3		ug/L		97	50 - 150
Toluene	20.0	21.3		ug/L		106	50 - 150
trans-1,2-Dichloroethene	20.0	21.0		ug/L		105	50 - 150
trans-1,3-Dichloropropene	20.0	20.0		ug/L		100	50 - 150
Trichloroethene	20.0	20.0		ug/L		100	50 - 150
Trichlorofluoromethane	20.0	19.7		ug/L		99	50 - 150
Vinyl chloride	20.0	21.5		ug/L		107	50 - 150
Xylenes, Total	40.0	44.3		ug/L		111	50 - 150
Cyclohexane	20.0	21.9		ug/L		110	50 - 150
Methyl acetate	40.0	44.5		ug/L		111	50 - 150
Methylcyclohexane	20.0	20.7		ug/L		104	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-8827/5
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			20.0	17.1		ug/L		85	50 - 150	4	30
1,1,2,2-Tetrachloroethane			20.0	24.8		ug/L		124	50 - 150	4	30
1,1,2-Trichloro-1,2,2-trifluoroethane			20.0	17.4		ug/L		87	50 - 150	2	30
1,1,2-Trichloroethane			20.0	23.2		ug/L		116	50 - 150	0	30
1,1-Dichloroethane			20.0	21.2		ug/L		106	50 - 150	3	30
1,1-Dichloroethene			20.0	18.9		ug/L		94	50 - 150	5	30
1,2,4-Trichlorobenzene			20.0	20.0		ug/L		100	50 - 150	6	30
1,2-Dibromo-3-Chloropropane			20.0	20.0		ug/L		100	50 - 150	5	30
1,2-Dibromoethane (EDB)			20.0	20.1		ug/L		101	50 - 150	0	30
1,2-Dichloroethane			20.0	19.5		ug/L		97	50 - 150	0	30
1,2-Dichloropropane			20.0	22.8		ug/L		114	50 - 150	4	30
2-Butanone (MEK)			200	213		ug/L		107	50 - 150	7	30
2-Hexanone			200	217		ug/L		109	50 - 150	7	30
Acetone			200	360	J3	ug/L		180	50 - 150	7	30
Benzene			20.0	21.8		ug/L		109	50 - 150	5	30
Bromodichloromethane			20.0	19.7		ug/L		98	70 - 130	2	30
Bromoform			20.0	20.2		ug/L		101	50 - 130	2	30
Bromomethane			20.0	14.0		ug/L		70	50 - 150	4	30
Carbon disulfide			20.0	19.9		ug/L		100	50 - 150	5	30
Carbon tetrachloride			20.0	17.0		ug/L		85	50 - 150	5	30
Chlorobenzene			20.0	21.5		ug/L		108	50 - 150	4	30
Chloroethane			20.0	22.1		ug/L		111	50 - 150	9	30
Chloroform			20.0	18.3		ug/L		92	50 - 150	4	30
Chloromethane			20.0	20.4		ug/L		102	50 - 150	9	30
cis-1,2-Dichloroethene			20.0	21.4		ug/L		107	50 - 150	2	30
cis-1,3-Dichloropropene			20.0	21.5		ug/L		107	50 - 150	0	30
Dibromochloromethane			20.0	18.8		ug/L		94	50 - 150	1	30
Dichlorodifluoromethane			20.0	23.0		ug/L		115	35 - 155	2	30
Ethylbenzene			20.0	21.2		ug/L		106	50 - 150	5	30
Isopropylbenzene			20.0	20.6		ug/L		103	50 - 150	10	30
m-Dichlorobenzene			20.0	21.0		ug/L		105	50 - 150	9	30
Methyl tert-butyl ether			20.0	19.9		ug/L		99	60 - 140	3	30
Methylene Chloride			20.0	20.1		ug/L		100	50 - 150	6	30
o-Dichlorobenzene			20.0	21.9		ug/L		109	50 - 150	8	30
para-Dichlorobenzene			20.0	20.8		ug/L		104	50 - 150	10	30
Styrene			20.0	21.8		ug/L		109	50 - 150	4	30
Tetrachloroethene			20.0	17.6		ug/L		88	50 - 150	9	30
Toluene			20.0	20.4		ug/L		102	50 - 150	4	30
trans-1,2-Dichloroethene			20.0	20.1		ug/L		100	50 - 150	4	30
trans-1,3-Dichloropropene			20.0	19.9		ug/L		99	50 - 150	0	30
Trichloroethene			20.0	19.1		ug/L		95	50 - 150	5	30
Trichlorofluoromethane			20.0	18.0		ug/L		90	50 - 150	9	30
Vinyl chloride			20.0	19.2		ug/L		96	50 - 150	11	30
Xylenes, Total			40.0	42.1		ug/L		105	50 - 150	5	
Cyclohexane			20.0	21.4		ug/L		107	50 - 150	3	30
Methyl acetate			40.0	40.5		ug/L		101	50 - 150	10	30
Methylcyclohexane			20.0	19.9		ug/L		100	50 - 150	4	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-8827/5
Matrix: Water
Analysis Batch: 8827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	92		80 - 120

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

GC/MS VOA

Analysis Batch: 8827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-7456-1	POL-MW0014ID-034.5-20221012	Total/NA	Water	8260B	
670-7456-2	POL-MW0035SI-020.5-20221012	Total/NA	Water	8260B	
670-7456-3	POL-MW0012S-013.5-20221012	Total/NA	Water	8260B	
670-7456-4	POL-MW0028I-027.5-20221013	Total/NA	Water	8260B	
670-7456-5	POL-MW0028S-011.9-20221013	Total/NA	Water	8260B	
670-7456-6	POL-MW0026II-027.5-20221013	Total/NA	Water	8260B	
670-7456-8	POL-MW0033SI-020.5-20221013	Total/NA	Water	8260B	
670-7456-9	SW3-MW0009-020.0-20221013	Total/NA	Water	8260B	
MB 670-8827/7	Method Blank	Total/NA	Water	8260B	
LCS 670-8827/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-8827/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 10297

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-7456-7	POL-MW0026S-013.6-20221013	Total/NA	Water	8260B	
MB 670-10297/6	Method Blank	Total/NA	Water	8260B	
LCS 670-10297/4	Lab Control Sample	Total/NA	Water	8260B	
670-8409-C-1 MS	Matrix Spike	Total/NA	Water	8260B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 670-7456-1
Project/Site: NASA KSC POL / SW3

Client Sample ID: POL-MW0014ID-034.5-20221012
Lab Sample ID: 670-7456-1
Date Collected: 10/13/22 13:20
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/23/22 23:50

Client Sample ID: POL-MW0035SI-020.5-20221012
Lab Sample ID: 670-7456-2
Date Collected: 10/13/22 14:00
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 00:07

Client Sample ID: POL-MW0012S-013.5-20221012
Lab Sample ID: 670-7456-3
Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 00:24

Client Sample ID: POL-MW0028I-027.5-20221013
Lab Sample ID: 670-7456-4
Date Collected: 10/13/22 10:20
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 00:41

Client Sample ID: POL-MW0028S-011.9-20221013
Lab Sample ID: 670-7456-5
Date Collected: 10/13/22 10:45
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 00:58

Client Sample ID: POL-MW0026II-027.5-20221013
Lab Sample ID: 670-7456-6
Date Collected: 10/13/22 11:50
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 01:15

Client Sample ID: POL-MW0026S-013.6-20221013
Lab Sample ID: 670-7456-7
Date Collected: 10/13/22 12:50
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		5	10297	K1P	EET ORL	11/05/22 17:12

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 670-7456-1
Project/Site: NASA KSC POL / SW3

Client Sample ID: POL-MW0033SI-020.5-20221013
Lab Sample ID: 670-7456-8
Date Collected: 10/13/22 14:15
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 01:32

Client Sample ID: SW3-MW0009-020.0-20221013
Lab Sample ID: 670-7456-9
Date Collected: 10/13/22 14:50
Matrix: Water
Date Received: 10/14/22 14:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8827	YP	EET ORL	10/24/22 01:49

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 670-7456-1
Project/Site: NASA KSC POL / SW3

Laboratory: Eurofins Orlando

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7456-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-7456-1	POL-MW0014ID-034.5-20221012	Water	10/13/22 13:20	10/14/22 14:20
670-7456-2	POL-MW0035SI-020.5-20221012	Water	10/13/22 14:00	10/14/22 14:20
670-7456-3	POL-MW0012S-013.5-20221012	Water	10/13/22 14:50	10/14/22 14:20
670-7456-4	POL-MW0028I-027.5-20221013	Water	10/13/22 10:20	10/14/22 14:20
670-7456-5	POL-MW0028S-011.9-20221013	Water	10/13/22 10:45	10/14/22 14:20
670-7456-6	POL-MW0026II-027.5-20221013	Water	10/13/22 11:50	10/14/22 14:20
670-7456-7	POL-MW0026S-013.6-20221013	Water	10/13/22 12:50	10/14/22 14:20
670-7456-8	POL-MW0033SI-020.5-20221013	Water	10/13/22 14:15	10/14/22 14:20
670-7456-9	SW3-MW0009-020.0-20221013	Water	10/13/22 14:50	10/14/22 14:20

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 2320 | PAGE 1 OF 1

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G09020	KSC-POL/SW3	Mark Sonnet	(412) 921-8622	ENCO — Kaitlin Olnick
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
[signature] - Chuck Sorden		Chuck Sorden	(321) 591-7580	10775 Central Port Dr.
Najvc - Natalie Fabbri		CARRIER/WAYBILL NUMBER		CITY, STATE
				Orlando, FL

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2022	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G): G	PRESERVATIVE USED: HCl/4°C	TYPE OF ANALYSIS: 8260D TCL SOM01	COMMENTS
10/12	1320	POL-MW0014SD-034.5-20221012	1012	32	37	GW	G	3	X			
1	1400	POL-MW0035SI-020.5-20221012	1012	18	23							
10/12	1450	POL-MW0012S-013.5-20221012	1012	11	16							
10/13	1020	POL-MW0028I-027.5-20221013	1013	25	30							
	1045	POL-MW0028S-011.9-20221013	1013	7.4	15							
	1150	POL-MW002CI-027.5-20221013	1013	25	30							
	1250	POL-MW002CS-013.5-20221013	1013	5	15							
	1415	POL-MW0033SI-020.5-20221013	1013	18	23							
10/13	1450	SW3 POL-MW0009-020.0-20221013	1013	15	25	GW	G	3	X			

670-7456 Chain of Custody

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY [signature]	10/14/22	11:40	1. RECEIVED BY [signature]	10-14-22	11:40
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE 10/14	TIME 1420

COMMENTS 1.3

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

11/18/2022

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-7456-1

Login Number: 7456
List Number: 1
Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Orlando

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island Florida 32953

Generated 11/16/2022 3:24:53 PM

JOB DESCRIPTION

NASA KSC POL / SW3

JOB NUMBER

670-7658-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL32701

my EOL

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.
V	Indicates that the analyte was detected at or above the method detection limit in both the sample and the associated method blank and the value of 10 times the blank value was equal to or greater than the associated sample value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-7658-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-7658-1

Receipt
The samples were received on 10/18/2022 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC/MS VOA
Method 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 670-8861 recovered outside control limits for the following analytes: Acetone. These analytes were biased high in the LCS and were not detected in the associated samples or less than the MB; therefore, the data have been reported. Acetone is a common lab contaminant.

Method 8260B: The method blank for analytical batch 670-8861 contained Acetone above the reporting limit (RL). This compound is considered a common laboratory contaminant. The associated sample(s) was not re-extracted and/or re-analyzed because the concentration of the common lab contaminant in the method blank was less than 5 times the RL.

Method 8260B: The continuing calibration verification (CCV) associated with batch 670-9128 recovered above the upper control limit for Acetone and Dichlorodifluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated samples are impacted: SW3-MW0024-040.0-20221018 (670-7658-3) and SW3-MW0025-040.0-20221018 (670-7658-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Client Sample ID: SW3-MW0027-032.0-20221018 — Lab Sample ID: 670-7658-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	11	I V J3	20	10	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.6		1.0	0.50	ug/L	1		8260B	Total/NA
Vinyl chloride	40		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: SW3-MW0028-032.0-20221018 — Lab Sample ID: 670-7658-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	13	I V J3	20	10	ug/L	1		8260B	Total/NA
Vinyl chloride	37		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: SW3-MW0024-040.0-20221018 — Lab Sample ID: 670-7658-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.50	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.54	I	1.0	0.50	ug/L	1		8260B	Total/NA
Vinyl chloride	2.3		1.0	0.50	ug/L	1		8260B	Total/NA

Client Sample ID: SW3-MW0025-040.0-20221018 — Lab Sample ID: 670-7658-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.71	I	1.0	0.50	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	36		1.0	0.50	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	3.3		1.0	0.50	ug/L	1		8260B	Total/NA
Trichloroethene	1.1		1.0	0.50	ug/L	1		8260B	Total/NA
Vinyl chloride	9.5		1.0	0.50	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Client Sample ID: SW3-MW0027-032.0-20221018
Date Collected: 10/18/22 11:35
Date Received: 10/18/22 16:40

Lab Sample ID: 670-7658-1
Matrix: Ground Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 17:42	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 17:42	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 17:42	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 17:42	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 17:42	1
Acetone	**11**	**I V J3**	20	10	ug/L			10/24/22 17:42	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 17:42	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 17:42	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
trans-1,2-Dichloroethene	**1.6**		1.0	0.50	ug/L			10/24/22 17:42	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Vinyl chloride	**40**		1.0	0.50	ug/L			10/24/22 17:42	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 17:42	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 17:42	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 17:42	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 17:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/24/22 17:42*	*1*

Client Sample ID: SW3-MW0027-032.0-20221018
Lab Sample ID: 670-7658-1
Date Collected: 10/18/22 11:35
Matrix: Ground Water
Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/24/22 17:42*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*10/24/22 17:42*	*1*

Client Sample ID: SW3-MW0028-032.0-20221018
Lab Sample ID: 670-7658-2
Date Collected: 10/18/22 10:30
Matrix: Ground Water
Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 17:25	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 17:25	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 17:25	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 17:25	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 17:25	1
Acetone	**13**	**I V J3**	20	10	ug/L			10/24/22 17:25	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 17:25	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 17:25	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1

Client Sample ID: SW3-MW0028-032.0-20221018

Lab Sample ID: 670-7658-2

Date Collected: 10/18/22 10:30

Matrix: Ground Water

Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Vinyl chloride	**37**		1.0	0.50	ug/L			10/24/22 17:25	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 17:25	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 17:25	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 17:25	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 17:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*80 - 120*		*10/24/22 17:25*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*10/24/22 17:25*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/24/22 17:25*	*1*

Client Sample ID: SW3-MW0024-040.0-20221018

Lab Sample ID: 670-7658-3

Date Collected: 10/18/22 13:30

Matrix: Ground Water

Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/26/22 19:05	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/26/22 19:05	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/26/22 19:05	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/26/22 19:05	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/26/22 19:05	1
Acetone	25	U	50	25	ug/L			10/26/22 19:05	1
Benzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/26/22 19:05	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
cis-1,2-Dichloroethene	**1.5**		1.0	0.50	ug/L			10/26/22 19:05	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1

Client Sample ID: SW3-MW0024-040.0-20221018
Lab Sample ID: 670-7658-3
Date Collected: 10/18/22 13:30
Matrix: Ground Water
Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/26/22 19:05	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Styrene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Toluene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
trans-1,2-Dichloroethene	**0.54**	**I**	1.0	0.50	ug/L			10/26/22 19:05	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Vinyl chloride	**2.3**		1.0	0.50	ug/L			10/26/22 19:05	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/26/22 19:05	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 19:05	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/26/22 19:05	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 19:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*80 - 120*		*10/26/22 19:05*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*10/26/22 19:05*	*1*
Dibromofluoromethane (Surr)	*95*		*80 - 120*		*10/26/22 19:05*	*1*

Client Sample ID: SW3-MW0025-040.0-20221018
Lab Sample ID: 670-7658-4
Date Collected: 10/18/22 14:25
Matrix: Ground Water
Date Received: 10/18/22 16:40

Method: SW846 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/26/22 18:48	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
1,1-Dichloroethene	**0.71**	**I**	1.0	0.50	ug/L			10/26/22 18:48	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/26/22 18:48	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/26/22 18:48	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/26/22 18:48	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/26/22 18:48	1
Acetone	25	U	50	25	ug/L			10/26/22 18:48	1
Benzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Client Sample ID: SW3-MW0025-040.0-20221018
Date Collected: 10/18/22 14:25
Date Received: 10/18/22 16:40

Lab Sample ID: 670-7658-4
Matrix: Ground Water

Method: SW846 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	0.50	U	5.0	0.50	ug/L			10/26/22 18:48	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
cis-1,2-Dichloroethene	**36**		1.0	0.50	ug/L			10/26/22 18:48	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/26/22 18:48	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Styrene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Toluene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
trans-1,2-Dichloroethene	**3.3**		1.0	0.50	ug/L			10/26/22 18:48	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Trichloroethene	**1.1**		1.0	0.50	ug/L			10/26/22 18:48	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Vinyl chloride	**9.5**		1.0	0.50	ug/L			10/26/22 18:48	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/26/22 18:48	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 18:48	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/26/22 18:48	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 18:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/26/22 18:48*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*10/26/22 18:48*	*1*
Dibromofluoromethane (Surr)	*94*		*80 - 120*		*10/26/22 18:48*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Ground Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)
670-7658-1	SW3-MW0027-032.0-20221018	97	102	95
670-7658-2	SW3-MW0028-032.0-20221018	100	104	94
670-7658-3	SW3-MW0024-040.0-20221018	97	103	95
670-7658-4	SW3-MW0025-040.0-20221018	98	102	94

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(80-120)	(80-120)	(80-120)
670-7989-G-1 MS	Matrix Spike	101	104	90
670-7989-G-1 MSD	Matrix Spike Duplicate	97	102	92
LCS 670-8861/4	Lab Control Sample	101	109	92
LCS 670-9128/6	Lab Control Sample	98	101	93
LCSD 670-8861/5	Lab Control Sample Dup	98	100	94
MB 670-8861/7	Method Blank	101	105	90
MB 670-9128/8	Method Blank	98	101	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 670-8861/7
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/24/22 13:22	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/24/22 13:22	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/24/22 13:22	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/24/22 13:22	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/24/22 13:22	1
Acetone	91.2		20	10	ug/L			10/24/22 13:22	1
Benzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/24/22 13:22	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/24/22 13:22	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Styrene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Toluene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/24/22 13:22	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 13:22	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/24/22 13:22	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/24/22 13:22	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-8861/7
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120		10/24/22 13:22	1
4-Bromofluorobenzene (Surr)	105		80 - 120		10/24/22 13:22	1
Dibromofluoromethane (Surr)	90		80 - 120		10/24/22 13:22	1

Lab Sample ID: LCS 670-8861/4
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	17.8		ug/L		89	50 - 150
1,1,2,2-Tetrachloroethane	20.0	26.5		ug/L		133	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	19.1		ug/L		95	50 - 150
1,1,2-Trichloroethane	20.0	21.9		ug/L		109	50 - 150
1,1-Dichloroethane	20.0	20.4		ug/L		102	50 - 150
1,1-Dichloroethene	20.0	20.8		ug/L		104	50 - 150
1,2,4-Trichlorobenzene	20.0	20.9		ug/L		105	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	20.1		ug/L		100	50 - 150
1,2-Dibromoethane (EDB)	20.0	18.7		ug/L		93	50 - 150
1,2-Dichloroethane	20.0	18.3		ug/L		92	50 - 150
1,2-Dichloropropane	20.0	23.2		ug/L		116	50 - 150
2-Butanone (MEK)	200	215		ug/L		108	50 - 150
2-Hexanone	200	218		ug/L		109	50 - 150
Acetone	200	367	V J3	ug/L		183	50 - 150
Benzene	20.0	21.4		ug/L		107	50 - 150
Bromodichloromethane	20.0	18.7		ug/L		94	70 - 130
Bromoform	20.0	20.0		ug/L		100	50 - 130
Bromomethane	20.0	14.5		ug/L		73	50 - 150
Carbon disulfide	20.0	20.5		ug/L		102	50 - 150
Carbon tetrachloride	20.0	18.2		ug/L		91	50 - 150
Chlorobenzene	20.0	20.6		ug/L		103	50 - 150
Chloroethane	20.0	19.9		ug/L		99	50 - 150
Chloroform	20.0	18.2		ug/L		91	50 - 150
Chloromethane	20.0	17.6		ug/L		88	50 - 150
cis-1,2-Dichloroethene	20.0	20.7		ug/L		103	50 - 150
cis-1,3-Dichloropropene	20.0	20.3		ug/L		101	50 - 150
Dibromochloromethane	20.0	18.1		ug/L		90	50 - 150
Dichlorodifluoromethane	20.0	18.8		ug/L		94	35 - 155
Ethylbenzene	20.0	20.3		ug/L		101	50 - 150
Isopropylbenzene	20.0	23.0		ug/L		115	50 - 150
m-Dichlorobenzene	20.0	22.5		ug/L		113	50 - 150
Methyl tert-butyl ether	20.0	19.1		ug/L		96	60 - 140
Methylene Chloride	20.0	20.7		ug/L		103	50 - 150
o-Dichlorobenzene	20.0	23.4		ug/L		117	50 - 150
para-Dichlorobenzene	20.0	22.6		ug/L		113	50 - 150
Styrene	20.0	19.6		ug/L		98	50 - 150
Tetrachloroethene	20.0	18.5		ug/L		92	50 - 150
Toluene	20.0	20.4		ug/L		102	50 - 150
trans-1,2-Dichloroethene	20.0	20.3		ug/L		102	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-8861/4
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
trans-1,3-Dichloropropene	20.0	19.2		ug/L		96	50 - 150
Trichloroethene	20.0	19.0		ug/L		95	50 - 150
Trichlorofluoromethane	20.0	18.3		ug/L		91	50 - 150
Vinyl chloride	20.0	17.6		ug/L		88	50 - 150
Xylenes, Total	40.0	40.4		ug/L		101	50 - 150
Cyclohexane	20.0	23.1		ug/L		115	50 - 150
Methyl acetate	40.0	42.1		ug/L		105	50 - 150
Methylcyclohexane	20.0	22.3		ug/L		112	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*109*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*

Lab Sample ID: LCSD 670-8861/5
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	20.0	17.4		ug/L		87	50 - 150	2	30
1,1,2,2-Tetrachloroethane	20.0	23.8		ug/L		119	50 - 150	11	30
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	18.6		ug/L		93	50 - 150	3	30
1,1,2-Trichloroethane	20.0	22.6		ug/L		113	50 - 150	3	30
1,1-Dichloroethane	20.0	19.8		ug/L		99	50 - 150	3	30
1,1-Dichloroethene	20.0	19.9		ug/L		99	50 - 150	4	30
1,2,4-Trichlorobenzene	20.0	18.7		ug/L		93	50 - 150	11	30
1,2-Dibromo-3-Chloropropane	20.0	18.7		ug/L		93	50 - 150	7	30
1,2-Dibromoethane (EDB)	20.0	19.2		ug/L		96	50 - 150	3	30
1,2-Dichloroethane	20.0	18.3		ug/L		91	50 - 150	0	30
1,2-Dichloropropane	20.0	22.7		ug/L		114	50 - 150	2	30
2-Butanone (MEK)	200	230		ug/L		115	50 - 150	7	30
2-Hexanone	200	230		ug/L		115	50 - 150	5	30
Acetone	200	366	V J3	ug/L		183	50 - 150	0	30
Benzene	20.0	21.6		ug/L		108	50 - 150	1	30
Bromodichloromethane	20.0	18.9		ug/L		95	70 - 130	1	30
Bromoform	20.0	18.2		ug/L		91	50 - 130	10	30
Bromomethane	20.0	13.7		ug/L		68	50 - 150	6	30
Carbon disulfide	20.0	19.4		ug/L		97	50 - 150	6	30
Carbon tetrachloride	20.0	17.8		ug/L		89	50 - 150	2	30
Chlorobenzene	20.0	21.2		ug/L		106	50 - 150	3	30
Chloroethane	20.0	18.2		ug/L		91	50 - 150	9	30
Chloroform	20.0	18.0		ug/L		90	50 - 150	1	30
Chloromethane	20.0	16.4		ug/L		82	50 - 150	7	30
cis-1,2-Dichloroethene	20.0	20.4		ug/L		102	50 - 150	2	30
cis-1,3-Dichloropropene	20.0	20.2		ug/L		101	50 - 150	0	30
Dibromochloromethane	20.0	18.2		ug/L		91	50 - 150	1	30
Dichlorodifluoromethane	20.0	17.9		ug/L		89	35 - 155	5	30
Ethylbenzene	20.0	20.8		ug/L		104	50 - 150	2	30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 670-8861/5
Matrix: Water
Analysis Batch: 8861

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Isopropylbenzene			20.0	20.2		ug/L		101	50 - 150	13	30
m-Dichlorobenzene			20.0	20.1		ug/L		100	50 - 150	12	30
Methyl tert-butyl ether			20.0	19.3		ug/L		96	60 - 140	1	30
Methylene Chloride			20.0	19.9		ug/L		100	50 - 150	4	30
o-Dichlorobenzene			20.0	20.6		ug/L		103	50 - 150	13	30
para-Dichlorobenzene			20.0	20.2		ug/L		101	50 - 150	11	30
Styrene			20.0	20.0		ug/L		100	50 - 150	2	30
Tetrachloroethene			20.0	18.4		ug/L		92	50 - 150	0	30
Toluene			20.0	20.0		ug/L		100	50 - 150	2	30
trans-1,2-Dichloroethene			20.0	19.4		ug/L		97	50 - 150	5	30
trans-1,3-Dichloropropene			20.0	19.9		ug/L		99	50 - 150	3	30
Trichloroethene			20.0	19.3		ug/L		97	50 - 150	1	30
Trichlorofluoromethane			20.0	16.9		ug/L		85	50 - 150	8	30
Vinyl chloride			20.0	16.8		ug/L		84	50 - 150	5	30
Xylenes, Total			40.0	40.9		ug/L		102	50 - 150	1	
Cyclohexane			20.0	23.1		ug/L		115	50 - 150	0	30
Methyl acetate			40.0	42.4		ug/L		106	50 - 150	1	30
Methylcyclohexane			20.0	21.8		ug/L		109	50 - 150	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*94*		*80 - 120*

Lab Sample ID: MB 670-9128/8
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
1,1,2-Trichloroethane	0.50	U	2.0	0.50	ug/L			10/26/22 15:08	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,2,4-Trichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,2-Dibromo-3-Chloropropane	0.10	U	10	0.10	ug/L			10/26/22 15:08	1
1,2-Dibromoethane (EDB)	0.10	U	12	0.10	ug/L			10/26/22 15:08	1
1,2-Dichloroethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
2-Butanone (MEK)	5.0	U	10	5.0	ug/L			10/26/22 15:08	1
2-Hexanone	1.0	U	20	1.0	ug/L			10/26/22 15:08	1
Acetone	40.6	I	50	25	ug/L			10/26/22 15:08	1
Benzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Bromoform	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Bromomethane	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 670-9128/8
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Chlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Chloroethane	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
Chloroform	0.50	U	5.0	0.50	ug/L			10/26/22 15:08	1
Chloromethane	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
cis-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
cis-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Dichlorodifluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Isopropylbenzene	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
m-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Methyl tert-butyl ether	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
Methylene Chloride	1.0	U	2.0	1.0	ug/L			10/26/22 15:08	1
o-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
para-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Styrene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Toluene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
trans-1,3-Dichloropropene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Trichloroethene	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Trichlorofluoromethane	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Xylenes, Total	0.50	U	1.0	0.50	ug/L			10/26/22 15:08	1
Cyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 15:08	1
Methyl acetate	0.50	U	10	0.50	ug/L			10/26/22 15:08	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			10/26/22 15:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*10/26/22 15:08*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*10/26/22 15:08*	*1*
Dibromofluoromethane (Surr)	*93*		*80 - 120*		*10/26/22 15:08*	*1*

Lab Sample ID: LCS 670-9128/6
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	13.3		ug/L		66	50 - 150
1,1,2,2-Tetrachloroethane	20.0	18.1		ug/L		90	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	13.7		ug/L		69	50 - 150
1,1,2-Trichloroethane	20.0	16.7		ug/L		84	50 - 150
1,1-Dichloroethane	20.0	15.7		ug/L		79	50 - 150
1,1-Dichloroethene	20.0	14.9		ug/L		75	50 - 150
1,2,4-Trichlorobenzene	20.0	14.7		ug/L		73	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	13.8		ug/L		69	50 - 150
1,2-Dibromoethane (EDB)	20.0	14.8		ug/L		74	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 670-9128/6
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichloroethane	20.0	14.3		ug/L		72	50 - 150
1,2-Dichloropropane	20.0	17.2		ug/L		86	50 - 150
2-Butanone (MEK)	200	193		ug/L		97	50 - 150
2-Hexanone	200	188		ug/L		94	50 - 150
Acetone	200	298		ug/L		149	50 - 150
Benzene	20.0	16.8		ug/L		84	50 - 150
Bromodichloromethane	20.0	14.5		ug/L		72	70 - 130
Bromoform	20.0	14.3		ug/L		71	50 - 130
Bromomethane	20.0	14.0		ug/L		70	50 - 150
Carbon disulfide	20.0	16.5		ug/L		83	50 - 150
Carbon tetrachloride	20.0	13.5		ug/L		67	50 - 150
Chlorobenzene	20.0	15.4		ug/L		77	50 - 150
Chloroethane	20.0	17.2		ug/L		86	50 - 150
Chloroform	20.0	13.7		ug/L		68	50 - 150
Chloromethane	20.0	18.2		ug/L		91	50 - 150
cis-1,2-Dichloroethene	20.0	16.0		ug/L		80	50 - 150
cis-1,3-Dichloropropene	20.0	15.6		ug/L		78	50 - 150
Dibromochloromethane	20.0	13.8		ug/L		69	50 - 150
Dichlorodifluoromethane	20.0	23.8		ug/L		119	35 - 155
Ethylbenzene	20.0	15.1		ug/L		76	50 - 150
Isopropylbenzene	20.0	15.1		ug/L		76	50 - 150
m-Dichlorobenzene	20.0	15.1		ug/L		76	50 - 150
Methyl tert-butyl ether	20.0	14.6		ug/L		73	60 - 140
Methylene Chloride	20.0	15.7		ug/L		79	50 - 150
o-Dichlorobenzene	20.0	15.8		ug/L		79	50 - 150
para-Dichlorobenzene	20.0	15.6		ug/L		78	50 - 150
Styrene	20.0	14.8		ug/L		74	50 - 150
Tetrachloroethene	20.0	13.9		ug/L		69	50 - 150
Toluene	20.0	15.5		ug/L		77	50 - 150
trans-1,2-Dichloroethene	20.0	15.5		ug/L		78	50 - 150
trans-1,3-Dichloropropene	20.0	15.1		ug/L		75	50 - 150
Trichloroethene	20.0	14.5		ug/L		72	50 - 150
Trichlorofluoromethane	20.0	15.7		ug/L		78	50 - 150
Vinyl chloride	20.0	18.3		ug/L		92	50 - 150
Xylenes, Total	40.0	29.6		ug/L		74	50 - 150
Cyclohexane	20.0	18.1		ug/L		91	50 - 150
Methyl acetate	40.0	27.6		ug/L		69	50 - 150
Methylcyclohexane	20.0	16.6		ug/L		83	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*
Dibromofluoromethane (Surr)	*93*		*80 - 120*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-7989-G-1 MS
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.50	U	20.0	20.0		ug/L		100	50 - 150
1,1,2,2-Tetrachloroethane	0.50	U	20.0	23.4		ug/L		117	50 - 150
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	20.0	22.3		ug/L		112	50 - 150
1,1,2-Trichloroethane	0.50	U	20.0	22.6		ug/L		113	50 - 150
1,1-Dichloroethane	0.50	U	20.0	22.5		ug/L		113	50 - 150
1,1-Dichloroethene	0.50	U	20.0	24.3		ug/L		122	50 - 150
1,2,4-Trichlorobenzene	0.50	U	20.0	20.0		ug/L		100	50 - 150
1,2-Dibromo-3-Chloropropane	0.10	U	20.0	17.5		ug/L		87	50 - 150
1,2-Dibromoethane (EDB)	0.10	U	20.0	19.9		ug/L		99	50 - 150
1,2-Dichloroethane	0.50	U	20.0	19.3		ug/L		97	50 - 150
1,2-Dichloropropane	0.50	U	20.0	24.2		ug/L		121	50 - 150
2-Butanone (MEK)	5.0	U	200	209		ug/L		104	50 - 150
2-Hexanone	1.0	U	200	206		ug/L		103	50 - 150
Acetone	25	U	200	213	V	ug/L		107	50 - 150
Benzene	0.50	U	20.0	24.3		ug/L		122	50 - 150
Bromodichloromethane	0.50	U	20.0	19.9		ug/L		100	70 - 130
Bromoform	0.50	U	20.0	18.4		ug/L		92	50 - 130
Bromomethane	1.0	U	20.0	20.9		ug/L		105	50 - 150
Carbon disulfide	1.0	U	20.0	25.7		ug/L		129	50 - 150
Carbon tetrachloride	0.50	U	20.0	20.6		ug/L		103	50 - 150
Chlorobenzene	0.50	U	20.0	20.9		ug/L		105	50 - 150
Chloroethane	1.0	U	20.0	26.8		ug/L		134	50 - 150
Chloroform	0.50	U	20.0	19.5		ug/L		97	50 - 150
Chloromethane	1.0	U	20.0	29.0		ug/L		145	50 - 150
cis-1,2-Dichloroethene	0.50	U	20.0	22.5		ug/L		113	50 - 150
cis-1,3-Dichloropropene	0.50	U	20.0	21.6		ug/L		108	50 - 150
Dibromochloromethane	0.50	U	20.0	18.4		ug/L		92	50 - 150
Dichlorodifluoromethane	0.50	U	20.0	42.3	J3	ug/L		212	35 - 155
Ethylbenzene	0.50	U	20.0	20.7		ug/L		103	50 - 150
Isopropylbenzene	1.0	U	20.0	22.7		ug/L		114	50 - 150
m-Dichlorobenzene	0.50	U	20.0	21.3		ug/L		106	50 - 150
Methyl tert-butyl ether	1.0	U	20.0	19.2		ug/L		96	60 - 140
Methylene Chloride	1.0	U	20.0	21.5		ug/L		108	50 - 150
o-Dichlorobenzene	0.50	U	20.0	21.2		ug/L		106	50 - 150
para-Dichlorobenzene	0.50	U	20.0	21.6		ug/L		108	50 - 150
Styrene	0.50	U	20.0	20.3		ug/L		102	50 - 150
Tetrachloroethene	0.50	U	20.0	21.0		ug/L		105	50 - 150
Toluene	0.50	U	20.0	22.1		ug/L		110	50 - 150
trans-1,2-Dichloroethene	0.50	U	20.0	23.0		ug/L		115	50 - 150
trans-1,3-Dichloropropene	0.50	U	20.0	20.2		ug/L		101	50 - 150
Trichloroethene	0.50	U	20.0	21.8		ug/L		109	50 - 150
Trichlorofluoromethane	0.50	U	20.0	25.7		ug/L		129	50 - 150
Vinyl chloride	0.50	U	20.0	28.0		ug/L		140	50 - 150
Xylenes, Total	0.50	U	40.0	41.0		ug/L		103	50 - 150
Cyclohexane	0.50	U	20.0	27.2		ug/L		136	50 - 150
Methyl acetate	0.50	U	40.0	38.7		ug/L		97	50 - 150
Methylcyclohexane	0.50	U	20.0	26.8		ug/L		134	50 - 150

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-7989-G-1 MS
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*
Dibromofluoromethane (Surr)	*90*		*80 - 120*

Lab Sample ID: 670-7989-G-1 MSD
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.50	U	20.0	20.3		ug/L		101	50 - 150	1	30
1,1,2,2-Tetrachloroethane	0.50	U	20.0	25.9		ug/L		129	50 - 150	10	30
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	20.0	21.7		ug/L		109	50 - 150	3	30
1,1,2-Trichloroethane	0.50	U	20.0	23.4		ug/L		117	50 - 150	4	30
1,1-Dichloroethane	0.50	U	20.0	22.8		ug/L		114	50 - 150	1	30
1,1-Dichloroethene	0.50	U	20.0	23.3		ug/L		116	50 - 150	4	30
1,2,4-Trichlorobenzene	0.50	U	20.0	21.4		ug/L		107	50 - 150	7	30
1,2-Dibromo-3-Chloropropane	0.10	U	20.0	20.2		ug/L		101	50 - 150	14	30
1,2-Dibromoethane (EDB)	0.10	U	20.0	20.3		ug/L		101	50 - 150	2	30
1,2-Dichloroethane	0.50	U	20.0	20.0		ug/L		100	50 - 150	3	30
1,2-Dichloropropane	0.50	U	20.0	24.8		ug/L		124	50 - 150	3	30
2-Butanone (MEK)	5.0	U	200	222		ug/L		111	50 - 150	6	30
2-Hexanone	1.0	U	200	223		ug/L		111	50 - 150	8	30
Acetone	25	U	200	219	V	ug/L		110	50 - 150	3	30
Benzene	0.50	U	20.0	24.1		ug/L		120	50 - 150	1	30
Bromodichloromethane	0.50	U	20.0	20.2		ug/L		101	70 - 130	1	30
Bromoform	0.50	U	20.0	19.7		ug/L		98	50 - 130	7	30
Bromomethane	1.0	U	20.0	20.5		ug/L		103	50 - 150	2	30
Carbon disulfide	1.0	U	20.0	24.9		ug/L		125	50 - 150	3	30
Carbon tetrachloride	0.50	U	20.0	20.3		ug/L		101	50 - 150	2	30
Chlorobenzene	0.50	U	20.0	23.3		ug/L		117	50 - 150	11	30
Chloroethane	1.0	U	20.0	25.6		ug/L		128	50 - 150	4	30
Chloroform	0.50	U	20.0	19.6		ug/L		98	50 - 150	1	30
Chloromethane	1.0	U	20.0	27.0		ug/L		135	50 - 150	7	30
cis-1,2-Dichloroethene	0.50	U	20.0	22.9		ug/L		115	50 - 150	2	30
cis-1,3-Dichloropropene	0.50	U	20.0	21.6		ug/L		108	50 - 150	0	30
Dibromochloromethane	0.50	U	20.0	19.1		ug/L		96	50 - 150	4	30
Dichlorodifluoromethane	0.50	U	20.0	39.7	J3	ug/L		199	35 - 155	6	30
Ethylbenzene	0.50	U	20.0	23.3		ug/L		116	50 - 150	12	30
Isopropylbenzene	1.0	U	20.0	24.1		ug/L		120	50 - 150	6	30
m-Dichlorobenzene	0.50	U	20.0	22.6		ug/L		113	50 - 150	6	30
Methyl tert-butyl ether	1.0	U	20.0	19.9		ug/L		100	60 - 140	3	30
Methylene Chloride	1.0	U	20.0	20.8		ug/L		104	50 - 150	3	30
o-Dichlorobenzene	0.50	U	20.0	22.7		ug/L		114	50 - 150	7	30
para-Dichlorobenzene	0.50	U	20.0	22.8		ug/L		114	50 - 150	5	30
Styrene	0.50	U	20.0	22.6		ug/L		113	50 - 150	11	30
Tetrachloroethene	0.50	U	20.0	21.0		ug/L		105	50 - 150	0	30
Toluene	0.50	U	20.0	22.4		ug/L		112	50 - 150	2	30
trans-1,2-Dichloroethene	0.50	U	20.0	23.0		ug/L		115	50 - 150	0	30

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 670-7989-G-1 MSD
Matrix: Water
Analysis Batch: 9128

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	0.50	U	20.0	21.1		ug/L		105	50 - 150	4	30
Trichloroethene	0.50	U	20.0	22.3		ug/L		112	50 - 150	2	30
Trichlorofluoromethane	0.50	U	20.0	24.6		ug/L		123	50 - 150	5	30
Vinyl chloride	0.50	U	20.0	27.2		ug/L		136	50 - 150	3	30
Xylenes, Total	0.50	U	40.0	45.7		ug/L		114	50 - 150	11	
Cyclohexane	0.50	U	20.0	27.8		ug/L		139	50 - 150	2	30
Methyl acetate	0.50	U	40.0	39.4		ug/L		98	50 - 150	2	30
Methylcyclohexane	0.50	U	20.0	26.4		ug/L		132	50 - 150	1	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*
Dibromofluoromethane (Surr)	*92*		*80 - 120*

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

GC/MS VOA

Analysis Batch: 8861

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-7658-1	SW3-MW0027-032.0-20221018	Total/NA	Ground Water	8260B	
670-7658-2	SW3-MW0028-032.0-20221018	Total/NA	Ground Water	8260B	
MB 670-8861/7	Method Blank	Total/NA	Water	8260B	
LCS 670-8861/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 670-8861/5	Lab Control Sample Dup	Total/NA	Water	8260B	

Analysis Batch: 9128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-7658-3	SW3-MW0024-040.0-20221018	Total/NA	Ground Water	8260B	
670-7658-4	SW3-MW0025-040.0-20221018	Total/NA	Ground Water	8260B	
MB 670-9128/8	Method Blank	Total/NA	Water	8260B	
LCS 670-9128/6	Lab Control Sample	Total/NA	Water	8260B	
670-7989-G-1 MS	Matrix Spike	Total/NA	Water	8260B	
670-7989-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 670-7658-1
Project/Site: NASA KSC POL / SW3

Client Sample ID: SW3-MW0027-032.0-20221018
Lab Sample ID: 670-7658-1
Date Collected: 10/18/22 11:35
Matrix: Ground Water
Date Received: 10/18/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8861	K1P	EET ORL	10/24/22 17:42

Client Sample ID: SW3-MW0028-032.0-20221018
Lab Sample ID: 670-7658-2
Date Collected: 10/18/22 10:30
Matrix: Ground Water
Date Received: 10/18/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	8861	K1P	EET ORL	10/24/22 17:25

Client Sample ID: SW3-MW0024-040.0-20221018
Lab Sample ID: 670-7658-3
Date Collected: 10/18/22 13:30
Matrix: Ground Water
Date Received: 10/18/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9128	JW	EET ORL	10/26/22 19:05

Client Sample ID: SW3-MW0025-040.0-20221018
Lab Sample ID: 670-7658-4
Date Collected: 10/18/22 14:25
Matrix: Ground Water
Date Received: 10/18/22 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260B		1	9128	JW	EET ORL	10/26/22 18:48

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 670-7658-1
Project/Site: NASA KSC POL / SW3

Laboratory: Eurofins Orlando

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Ground Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Ground Water	Cyclohexane
8260B		Ground Water	Methyl acetate
8260B		Ground Water	Methylcyclohexane

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL / SW3

Job ID: 670-7658-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-7658-1	SW3-MW0027-032.0-20221018	Ground Water	10/18/22 11:35	10/18/22 16:40
670-7658-2	SW3-MW0028-032.0-20221018	Ground Water	10/18/22 10:30	10/18/22 16:40
670-7658-3	SW3-MW0024-040.0-20221018	Ground Water	10/18/22 13:30	10/18/22 16:40
670-7658-4	SW3-MW0025-040.0-20221018	Ground Water	10/18/22 14:25	10/18/22 16:40

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 2303 | PAGE 1 OF 1

PROJECT NO: 112g0 9020	FACILITY: KSC-NASA · POL-SW3	PROJECT MANAGER Mark Jonnet	PHONE NUMBER 412 921-8622	LABORATORY NAME AND CONTACT: ENCO Keith Dylnicki
SAMPLERS (SIGNATURE) Robert Siegel		FIELD OPERATIONS LEADER SM Chuck Sorden	PHONE NUMBER 321 591-7580	ADDRESS 10775 Central Port Dr
		CARRIER/WAYBILL NUMBER		CITY, STATE Orlando FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2022	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: 8260 +FCL	TYPE OF ANALYSIS: SO MO 1	TYPE OF ANALYSIS: HCL Ice	COMMENTS
10/18	1135	SW3 MW0027 032.0 20221018	27	27	37	GW	G	3	G		X			
10/18	1030	SW3 MW0028 032.0 20221018	28	27	37	GW	G	3	G		X			
10/18	1330	SW3 MW0024 040.0 20221018	24	35	45	GW	G	3	G		X			
10/18	1425	SW3 MW0025 040.0 20221018	25	35	45	GW	G	3	G		X			

670-7658 Chain of Custody

1. RELINQUISHED BY		DATE 10/18/22	TIME 1514	1. RECEIVED BY James W Gregory	DATE 10/18/22	TIME 1514	
2. RELINQUISHED BY		DATE	TIME	2. RECEIVED BY	DATE	TIME	
3. RELINQUISHED BY		DATE	TIME	3. RECEIVED BY	DATE 10/18	TIME 1640	

COMMENTS 1.2

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-7658-1

Login Number: 7658
List Number: 1
Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Orlando

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 1/23/2023 9:40:35 AM

JOB DESCRIPTION

NASA KSC POL

JOB NUMBER

670-11983-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

my EOL

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

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Authorization



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Authorized for release by
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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-11983-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-11983-1

Receipt
The samples were received on 12/22/2022 4:50 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.4°C

GC/MS VOA
Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: POL-MW0034S-010.0-20221221 (670-11983-2). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: POL-MW0034S-010.0-20221221 (670-11983-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Client Sample ID: POL-MW0042SI-020.5-20221221 — Lab Sample ID: 670-11983-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	37		1.0	0.53	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.9		1.0	0.73	ug/L	1		8260D	Total/NA
Trichloroethene	9.9		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0034S-010.0-20221221 — Lab Sample ID: 670-11983-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene - DL	37		25	13	ug/L	25		8260D	Total/NA
Trichloroethene - DL	1200		25	22	ug/L	25		8260D	Total/NA

Client Sample ID: POL-MW0045I-025.0-20221222 — Lab Sample ID: 670-11983-3

No Detections.

Client Sample ID: POL-MW0044D-035.0-20221222 — Lab Sample ID: 670-11983-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.64	I	1.0	0.53	ug/L	1		8260D	Total/NA
Trichloroethene	1.0		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0043I-025.0-20221222 — Lab Sample ID: 670-11983-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.7		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0041SI-020.5-20221222 — Lab Sample ID: 670-11983-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.8		1.0	0.53	ug/L	1		8260D	Total/NA
Trichloroethene	2.5		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0031S-010.0-20221222 — Lab Sample ID: 670-11983-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.0		1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW008I-027.5-20221222 — Lab Sample ID: 670-11983-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.4		1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0036I-027.5-20221222 — Lab Sample ID: 670-11983-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.7		1.0	0.53	ug/L	1		8260D	Total/NA
Trichloroethene	2.4		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0036SI-020.5-20221222 — Lab Sample ID: 670-11983-10

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	3.1		1.0	0.89	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Client Sample ID: POL-MW0042SI-020.5-20221221
Date Collected: 12/21/22 14:20
Date Received: 12/22/22 16:50

Lab Sample ID: 670-11983-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 15:11	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 15:11	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 15:11	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 15:11	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 15:11	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 15:11	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 15:11	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 15:11	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 15:11	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 15:11	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 15:11	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 15:11	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 15:11	1
Acetone	25	U	50	25	ug/L			01/03/23 15:11	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 15:11	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 15:11	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 15:11	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 15:11	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 15:11	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 15:11	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 15:11	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 15:11	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 15:11	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 15:11	1
cis-1,2-Dichloroethene	**37**		1.0	0.53	ug/L			01/03/23 15:11	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 15:11	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 15:11	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 15:11	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 15:11	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 15:11	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 15:11	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 15:11	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 15:11	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 15:11	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 15:11	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 15:11	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 15:11	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 15:11	1
trans-1,2-Dichloroethene	**1.9**		1.0	0.73	ug/L			01/03/23 15:11	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 15:11	1
Trichloroethene	**9.9**		1.0	0.89	ug/L			01/03/23 15:11	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 15:11	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 15:11	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 15:11	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 15:11	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 15:11	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 15:11	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 15:11	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 15:11	1

Client Sample ID: POL-MW0042SI-020.5-20221221

Lab Sample ID: 670-11983-1

Date Collected: 12/21/22 14:20

Matrix: Ground Water

Date Received: 12/22/22 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*102*		*40 - 146*		*01/03/23 15:11*	*1*
4-Bromofluorobenzene (Surr)	*97*		*41 - 142*		*01/03/23 15:11*	*1*
Dibromofluoromethane (Surr)	*101*		*53 - 146*		*01/03/23 15:11*	*1*

Client Sample ID: POL-MW0034S-010.0-20221221

Lab Sample ID: 670-11983-2

Date Collected: 12/21/22 15:20

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	20	U	25	20	ug/L			01/03/23 15:49	25
1,1,2,2-Tetrachloroethane	14	U	25	14	ug/L			01/03/23 15:49	25
1,1,2-Trichloro-1,2,2-trifluoroethane	18	U	50	18	ug/L			01/03/23 15:49	25
1,1,2-Trichloroethane	19	U	50	19	ug/L			01/03/23 15:49	25
1,1-Dichloroethane	16	U	25	16	ug/L			01/03/23 15:49	25
1,1-Dichloroethene	24	U	25	24	ug/L			01/03/23 15:49	25
1,2,4-Trichlorobenzene	18	U	25	18	ug/L			01/03/23 15:49	25
1,2-Dibromo-3-Chloropropane	24	U	250	24	ug/L			01/03/23 15:49	25
1,2-Dibromoethane (EDB)	20	U	300	20	ug/L			01/03/23 15:49	25
1,2-Dichloroethane	16	U	25	16	ug/L			01/03/23 15:49	25
1,2-Dichloropropane	20	U	25	20	ug/L			01/03/23 15:49	25
2-Butanone (MEK)	110	U	250	110	ug/L			01/03/23 15:49	25
2-Hexanone	63	U	500	63	ug/L			01/03/23 15:49	25
Acetone	630	U	1300	630	ug/L			01/03/23 15:49	25
Benzene	18	U	25	18	ug/L			01/03/23 15:49	25
Bromodichloromethane	13	U	25	13	ug/L			01/03/23 15:49	25
Bromoform	19	U	25	19	ug/L			01/03/23 15:49	25
Bromomethane	24	U	50	24	ug/L			01/03/23 15:49	25
Carbon disulfide	63	U	130	63	ug/L			01/03/23 15:49	25
Carbon tetrachloride	24	U	25	24	ug/L			01/03/23 15:49	25
Chlorobenzene	18	U	25	18	ug/L			01/03/23 15:49	25
Chloroethane	25	U	50	25	ug/L			01/03/23 15:49	25
Chloroform	20	U	130	20	ug/L			01/03/23 15:49	25
Chloromethane	21	U	50	21	ug/L			01/03/23 15:49	25
cis-1,2-Dichloroethene	**37**		25	13	ug/L			01/03/23 15:49	25
cis-1,3-Dichloropropene	15	U	25	15	ug/L			01/03/23 15:49	25
Dibromochloromethane	13	U	25	13	ug/L			01/03/23 15:49	25
Dichlorodifluoromethane	19	U	25	19	ug/L			01/03/23 15:49	25
Ethylbenzene	17	U	25	17	ug/L			01/03/23 15:49	25
Isopropylbenzene	17	U	50	17	ug/L			01/03/23 15:49	25
m-Dichlorobenzene	19	U	25	19	ug/L			01/03/23 15:49	25
Methyl tert-butyl ether	15	U	50	15	ug/L			01/03/23 15:49	25
Methylene Chloride	130	U	250	130	ug/L			01/03/23 15:49	25
o-Dichlorobenzene	18	U	25	18	ug/L			01/03/23 15:49	25
para-Dichlorobenzene	19	U	25	19	ug/L			01/03/23 15:49	25
Styrene	15	U	25	15	ug/L			01/03/23 15:49	25
Tetrachloroethene	19	U	25	19	ug/L			01/03/23 15:49	25
Toluene	18	U	25	18	ug/L			01/03/23 15:49	25
trans-1,2-Dichloroethene	18	U	25	18	ug/L			01/03/23 15:49	25
trans-1,3-Dichloropropene	18	U	25	18	ug/L			01/03/23 15:49	25

Client Sample ID: POL-MW0034S-010.0-20221221

Lab Sample ID: 670-11983-2

Date Collected: 12/21/22 15:20

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - DL (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**1200**		25	22	ug/L			01/03/23 15:49	25
Trichlorofluoromethane	24	U	25	24	ug/L			01/03/23 15:49	25
Vinyl chloride	18	U	25	18	ug/L			01/03/23 15:49	25
Xylenes, Total	33	U	50	33	ug/L			01/03/23 15:49	25
m,p-Xylenes	33	U	50	33	ug/L			01/03/23 15:49	25
o-Xylene	13	U	25	13	ug/L			01/03/23 15:49	25
Cyclohexane	23	U	130	23	ug/L			01/03/23 15:49	25
Methyl acetate	24	U	250	24	ug/L			01/03/23 15:49	25
Methylcyclohexane	13	U	130	13	ug/L			01/03/23 15:49	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*40 - 146*		*01/03/23 15:49*	*25*
4-Bromofluorobenzene (Surr)	*97*		*41 - 142*		*01/03/23 15:49*	*25*
Dibromofluoromethane (Surr)	*94*		*53 - 146*		*01/03/23 15:49*	*25*

Client Sample ID: POL-MW0045I-025.0-20221222

Lab Sample ID: 670-11983-3

Date Collected: 12/22/22 10:10

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 15:28	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 15:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 15:28	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 15:28	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 15:28	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 15:28	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 15:28	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 15:28	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 15:28	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 15:28	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 15:28	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 15:28	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 15:28	1
Acetone	25	U	50	25	ug/L			01/03/23 15:28	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 15:28	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 15:28	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 15:28	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 15:28	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 15:28	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 15:28	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 15:28	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 15:28	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 15:28	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 15:28	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			01/03/23 15:28	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 15:28	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 15:28	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 15:28	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 15:28	1

Client Sample ID: POL-MW0045I-025.0-20221222

Lab Sample ID: 670-11983-3

Date Collected: 12/22/22 10:10

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 15:28	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 15:28	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 15:28	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 15:28	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 15:28	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 15:28	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 15:28	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 15:28	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 15:28	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 15:28	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 15:28	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			01/03/23 15:28	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 15:28	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 15:28	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 15:28	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 15:28	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 15:28	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 15:28	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 15:28	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 15:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*40 - 146*		*01/03/23 15:28*	*1*
4-Bromofluorobenzene (Surr)	*98*		*41 - 142*		*01/03/23 15:28*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 146*		*01/03/23 15:28*	*1*

Client Sample ID: POL-MW0044D-035.0-20221222

Lab Sample ID: 670-11983-4

Date Collected: 12/22/22 11:35

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 16:07	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 16:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 16:07	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 16:07	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 16:07	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 16:07	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 16:07	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 16:07	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 16:07	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 16:07	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 16:07	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 16:07	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 16:07	1
Acetone	25	U	50	25	ug/L			01/03/23 16:07	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 16:07	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 16:07	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 16:07	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 16:07	1

Client Sample ID: POL-MW0044D-035.0-20221222

Lab Sample ID: 670-11983-4

Date Collected: 12/22/22 11:35

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 16:07	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 16:07	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 16:07	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 16:07	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 16:07	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 16:07	1
cis-1,2-Dichloroethene	**0.64**	**I**	1.0	0.53	ug/L			01/03/23 16:07	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 16:07	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 16:07	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 16:07	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 16:07	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 16:07	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 16:07	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 16:07	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 16:07	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 16:07	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 16:07	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 16:07	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 16:07	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 16:07	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 16:07	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 16:07	1
Trichloroethene	**1.0**		1.0	0.89	ug/L			01/03/23 16:07	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 16:07	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 16:07	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 16:07	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 16:07	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 16:07	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 16:07	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 16:07	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 16:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*40 - 146*		*01/03/23 16:07*	*1*
4-Bromofluorobenzene (Surr)	*100*		*41 - 142*		*01/03/23 16:07*	*1*
Dibromofluoromethane (Surr)	*94*		*53 - 146*		*01/03/23 16:07*	*1*

Client Sample ID: POL-MW0043I-025.0-20221222

Lab Sample ID: 670-11983-5

Date Collected: 12/22/22 11:30

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 16:25	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 16:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 16:25	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 16:25	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 16:25	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 16:25	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 16:25	1

Client Sample ID: POL-MW0043I-025.0-20221222
Date Collected: 12/22/22 11:30
Date Received: 12/22/22 16:50

Lab Sample ID: 670-11983-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 16:25	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 16:25	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 16:25	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 16:25	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 16:25	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 16:25	1
Acetone	25	U	50	25	ug/L			01/03/23 16:25	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 16:25	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 16:25	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 16:25	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 16:25	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 16:25	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 16:25	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 16:25	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 16:25	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 16:25	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 16:25	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			01/03/23 16:25	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 16:25	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 16:25	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 16:25	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 16:25	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 16:25	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 16:25	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 16:25	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 16:25	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 16:25	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 16:25	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 16:25	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 16:25	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 16:25	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 16:25	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 16:25	1
Trichloroethene	**3.7**		1.0	0.89	ug/L			01/03/23 16:25	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 16:25	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 16:25	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 16:25	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 16:25	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 16:25	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 16:25	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 16:25	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*40 - 146*		*01/03/23 16:25*	*1*
4-Bromofluorobenzene (Surr)	*98*		*41 - 142*		*01/03/23 16:25*	*1*
Dibromofluoromethane (Surr)	*96*		*53 - 146*		*01/03/23 16:25*	*1*

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Client Sample ID: POL-MW0041SI-020.5-20221222
Date Collected: 12/22/22 12:20
Date Received: 12/22/22 16:50

Lab Sample ID: 670-11983-6
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 16:43	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 16:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 16:43	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 16:43	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 16:43	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 16:43	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 16:43	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 16:43	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 16:43	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 16:43	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 16:43	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 16:43	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 16:43	1
Acetone	25	U	50	25	ug/L			01/03/23 16:43	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 16:43	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 16:43	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 16:43	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 16:43	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 16:43	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 16:43	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 16:43	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 16:43	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 16:43	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 16:43	1
cis-1,2-Dichloroethene	**4.8**		1.0	0.53	ug/L			01/03/23 16:43	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 16:43	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 16:43	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 16:43	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 16:43	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 16:43	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 16:43	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 16:43	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 16:43	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 16:43	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 16:43	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 16:43	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 16:43	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 16:43	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 16:43	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 16:43	1
Trichloroethene	**2.5**		1.0	0.89	ug/L			01/03/23 16:43	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 16:43	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 16:43	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 16:43	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 16:43	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 16:43	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 16:43	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 16:43	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 16:43	1

Client Sample ID: POL-MW0041SI-020.5-20221222

Lab Sample ID: 670-11983-6

Date Collected: 12/22/22 12:20

Matrix: Ground Water

Date Received: 12/22/22 16:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	96		40 - 146		01/03/23 16:43	1
4-Bromofluorobenzene (Surr)	97		41 - 142		01/03/23 16:43	1
Dibromofluoromethane (Surr)	96		53 - 146		01/03/23 16:43	1

Client Sample ID: POL-MW0031S-010.0-20221222

Lab Sample ID: 670-11983-7

Date Collected: 12/22/22 13:00

Matrix: Groundwater

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 17:01	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 17:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 17:01	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 17:01	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 17:01	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 17:01	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 17:01	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 17:01	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 17:01	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 17:01	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 17:01	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 17:01	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 17:01	1
Acetone	25	U	50	25	ug/L			01/03/23 17:01	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 17:01	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 17:01	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 17:01	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 17:01	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 17:01	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 17:01	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 17:01	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 17:01	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 17:01	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 17:01	1
cis-1,2-Dichloroethene	**2.0**		1.0	0.53	ug/L			01/03/23 17:01	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 17:01	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 17:01	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 17:01	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 17:01	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 17:01	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 17:01	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 17:01	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 17:01	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 17:01	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 17:01	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 17:01	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 17:01	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 17:01	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 17:01	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 17:01	1

Client Sample ID: POL-MW0031S-010.0-20221222

Lab Sample ID: 670-11983-7

Date Collected: 12/22/22 13:00

Matrix: Groundwater

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.89	U	1.0	0.89	ug/L			01/03/23 17:01	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 17:01	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 17:01	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 17:01	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 17:01	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 17:01	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 17:01	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 17:01	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 17:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*40 - 146*		*01/03/23 17:01*	*1*
4-Bromofluorobenzene (Surr)	*97*		*41 - 142*		*01/03/23 17:01*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 146*		*01/03/23 17:01*	*1*

Client Sample ID: POL-MW008I-027.5-20221222

Lab Sample ID: 670-11983-8

Date Collected: 12/22/22 13:50

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 17:19	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 17:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 17:19	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 17:19	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 17:19	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 17:19	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 17:19	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 17:19	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 17:19	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 17:19	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 17:19	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 17:19	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 17:19	1
Acetone	25	U	50	25	ug/L			01/03/23 17:19	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 17:19	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 17:19	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 17:19	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 17:19	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 17:19	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 17:19	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 17:19	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 17:19	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 17:19	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 17:19	1
cis-1,2-Dichloroethene	**2.4**		1.0	0.53	ug/L			01/03/23 17:19	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 17:19	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 17:19	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 17:19	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 17:19	1

Client Sample ID: POL-MW008I-027.5-20221222

Lab Sample ID: 670-11983-8

Date Collected: 12/22/22 13:50

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 17:19	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 17:19	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 17:19	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 17:19	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 17:19	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 17:19	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 17:19	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 17:19	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 17:19	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 17:19	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 17:19	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			01/03/23 17:19	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 17:19	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 17:19	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 17:19	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 17:19	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 17:19	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 17:19	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 17:19	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 17:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*40 - 146*		*01/03/23 17:19*	*1*
4-Bromofluorobenzene (Surr)	*98*		*41 - 142*		*01/03/23 17:19*	*1*
Dibromofluoromethane (Surr)	*98*		*53 - 146*		*01/03/23 17:19*	*1*

Client Sample ID: POL-MW0036I-027.5-20221222

Lab Sample ID: 670-11983-9

Date Collected: 12/22/22 14:15

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 17:37	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 17:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 17:37	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 17:37	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 17:37	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 17:37	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 17:37	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 17:37	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 17:37	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 17:37	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 17:37	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 17:37	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 17:37	1
Acetone	25	U	50	25	ug/L			01/03/23 17:37	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 17:37	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 17:37	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 17:37	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 17:37	1

Client Sample ID: POL-MW0036I-027.5-20221222

Lab Sample ID: 670-11983-9

Date Collected: 12/22/22 14:15

Matrix: Ground Water

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 17:37	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 17:37	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 17:37	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 17:37	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 17:37	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 17:37	1
cis-1,2-Dichloroethene	**2.7**		1.0	0.53	ug/L			01/03/23 17:37	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 17:37	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 17:37	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 17:37	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 17:37	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 17:37	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 17:37	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 17:37	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 17:37	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 17:37	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 17:37	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 17:37	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 17:37	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 17:37	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 17:37	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 17:37	1
Trichloroethene	**2.4**		1.0	0.89	ug/L			01/03/23 17:37	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 17:37	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 17:37	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 17:37	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 17:37	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 17:37	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 17:37	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 17:37	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 17:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*40 - 146*		*01/03/23 17:37*	*1*
4-Bromofluorobenzene (Surr)	*100*		*41 - 142*		*01/03/23 17:37*	*1*
Dibromofluoromethane (Surr)	*99*		*53 - 146*		*01/03/23 17:37*	*1*

Client Sample ID: POL-MW0036SI-020.5-20221222

Lab Sample ID: 670-11983-10

Date Collected: 12/22/22 14:55

Matrix: Groundwater

Date Received: 12/22/22 16:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 17:55	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 17:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 17:55	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 17:55	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 17:55	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 17:55	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 17:55	1

Client Sample ID: POL-MW0036SI-020.5-20221222
Date Collected: 12/22/22 14:55
Date Received: 12/22/22 16:50

Lab Sample ID: 670-11983-10
Matrix: Groundwater

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 17:55	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 17:55	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 17:55	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 17:55	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 17:55	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 17:55	1
Acetone	25	U	50	25	ug/L			01/03/23 17:55	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 17:55	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 17:55	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 17:55	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 17:55	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 17:55	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 17:55	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 17:55	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 17:55	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 17:55	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 17:55	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			01/03/23 17:55	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 17:55	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 17:55	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 17:55	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 17:55	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 17:55	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 17:55	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 17:55	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 17:55	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 17:55	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 17:55	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 17:55	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 17:55	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 17:55	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 17:55	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 17:55	1
Trichloroethene	**3.1**		1.0	0.89	ug/L			01/03/23 17:55	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 17:55	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 17:55	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 17:55	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 17:55	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 17:55	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 17:55	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 17:55	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 17:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*40 - 146*		*01/03/23 17:55*	*1*
4-Bromofluorobenzene (Surr)	*97*		*41 - 142*		*01/03/23 17:55*	*1*
Dibromofluoromethane (Surr)	*100*		*53 - 146*		*01/03/23 17:55*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(40-146)	(41-142)	(53-146)
670-11983-1	POL-MW0042SI-020.5-20221222	102	97	101
670-11983-2 - DL	POL-MW0034S-010.0-20221221	97	97	94
670-11983-3	POL-MW0045I-025.0-20221222	98	98	98
670-11983-4	POL-MW0044D-035.0-20221222	97	100	94
670-11983-5	POL-MW0043I-025.0-20221222	101	98	96
670-11983-6	POL-MW0041SI-020.5-20221222	96	97	96
670-11983-8	POL-MW008I-027.5-20221222	99	98	98
670-11983-9	POL-MW0036I-027.5-20221222	99	100	99

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Groundwater — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(40-146)	(41-142)	(53-146)
670-11983-7	POL-MW0031S-010.0-20221222	97	97	98
670-11983-10	POL-MW0036SI-020.5-20221222	98	97	100

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(40-146)	(41-142)	(53-146)
660-125915-G-3 DU	Duplicate	100	96	101
660-125927-E-1 MS	Matrix Spike	99	99	103
LCS 670-16630/4	Lab Control Sample	102	98	102
MB 670-16630/6	Method Blank	99	99	93

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-16630/6
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			01/03/23 10:50	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			01/03/23 10:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			01/03/23 10:50	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			01/03/23 10:50	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			01/03/23 10:50	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			01/03/23 10:50	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			01/03/23 10:50	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			01/03/23 10:50	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			01/03/23 10:50	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			01/03/23 10:50	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			01/03/23 10:50	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			01/03/23 10:50	1
2-Hexanone	2.5	U	20	2.5	ug/L			01/03/23 10:50	1
Acetone	25	U	50	25	ug/L			01/03/23 10:50	1
Benzene	0.71	U	1.0	0.71	ug/L			01/03/23 10:50	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			01/03/23 10:50	1
Bromoform	0.75	U	1.0	0.75	ug/L			01/03/23 10:50	1
Bromomethane	0.95	U	2.0	0.95	ug/L			01/03/23 10:50	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			01/03/23 10:50	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			01/03/23 10:50	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			01/03/23 10:50	1
Chloroethane	0.98	U	2.0	0.98	ug/L			01/03/23 10:50	1
Chloroform	0.80	U	5.0	0.80	ug/L			01/03/23 10:50	1
Chloromethane	0.82	U	2.0	0.82	ug/L			01/03/23 10:50	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			01/03/23 10:50	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			01/03/23 10:50	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			01/03/23 10:50	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			01/03/23 10:50	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			01/03/23 10:50	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			01/03/23 10:50	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			01/03/23 10:50	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			01/03/23 10:50	1
Methylene Chloride	5.0	U	10	5.0	ug/L			01/03/23 10:50	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			01/03/23 10:50	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			01/03/23 10:50	1
Styrene	0.61	U	1.0	0.61	ug/L			01/03/23 10:50	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			01/03/23 10:50	1
Toluene	0.72	U	1.0	0.72	ug/L			01/03/23 10:50	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			01/03/23 10:50	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			01/03/23 10:50	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			01/03/23 10:50	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			01/03/23 10:50	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			01/03/23 10:50	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			01/03/23 10:50	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			01/03/23 10:50	1
o-Xylene	0.53	U	1.0	0.53	ug/L			01/03/23 10:50	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			01/03/23 10:50	1
Methyl acetate	0.95	U	10	0.95	ug/L			01/03/23 10:50	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 670-16630/6
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			01/03/23 10:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*40 - 146*		*01/03/23 10:50*	*1*
4-Bromofluorobenzene (Surr)	*99*		*41 - 142*		*01/03/23 10:50*	*1*
Dibromofluoromethane (Surr)	*93*		*53 - 146*		*01/03/23 10:50*	*1*

Lab Sample ID: LCS 670-16630/4
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	21.9		ug/L		109	57 - 148
1,1,2,2-Tetrachloroethane	20.0	22.1		ug/L		110	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	22.0		ug/L		110	47 - 173
1,1,2-Trichloroethane	20.0	21.7		ug/L		109	57 - 141
1,1-Dichloroethane	20.0	22.4		ug/L		112	57 - 142
1,1-Dichloroethene	20.0	20.5		ug/L		102	47 - 139
1,2,4-Trichlorobenzene	20.0	22.7		ug/L		113	52 - 159
1,2-Dibromo-3-Chloropropane	20.0	19.4		ug/L		97	48 - 150
1,2-Dibromoethane (EDB)	20.0	20.7		ug/L		104	57 - 140
1,2-Dichloroethane	20.0	20.5		ug/L		103	50 - 156
1,2-Dichloropropane	20.0	22.7		ug/L		114	61 - 133
2-Butanone (MEK)	200	155		ug/L		78	10 - 180
2-Hexanone	200	213		ug/L		106	12 - 180
Acetone	200	164		ug/L		82	10 - 180
Benzene	20.0	22.6		ug/L		113	56 - 136
Bromodichloromethane	20.0	21.7		ug/L		109	58 - 135
Bromoform	20.0	20.5		ug/L		103	46 - 148
Bromomethane	20.0	15.7		ug/L		78	10 - 173
Carbon disulfide	20.0	20.3		ug/L		102	43 - 153
Carbon tetrachloride	20.0	21.8		ug/L		109	54 - 156
Chlorobenzene	20.0	22.0		ug/L		110	51 - 139
Chloroethane	20.0	22.0		ug/L		110	27 - 180
Chloroform	20.0	20.8		ug/L		104	58 - 139
Chloromethane	20.0	19.1		ug/L		96	33 - 154
cis-1,2-Dichloroethene	20.0	23.0		ug/L		115	56 - 128
cis-1,3-Dichloropropene	20.0	22.4		ug/L		112	64 - 128
Dibromochloromethane	20.0	22.0		ug/L		110	50 - 140
Dichlorodifluoromethane	20.0	22.3		ug/L		112	10 - 180
Ethylbenzene	20.0	22.6		ug/L		113	63 - 133
Isopropylbenzene	20.0	22.7		ug/L		113	60 - 132
m-Dichlorobenzene	20.0	21.1		ug/L		106	66 - 129
Methyl tert-butyl ether	20.0	18.3		ug/L		91	51 - 145
Methylene Chloride	20.0	23.3		ug/L		117	43 - 142
o-Dichlorobenzene	20.0	20.4		ug/L		102	63 - 131
para-Dichlorobenzene	20.0	21.3		ug/L		106	65 - 133
Styrene	20.0	23.1		ug/L		115	59 - 136

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 670-16630/4
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrachloroethene	20.0	20.5		ug/L		103	60 - 147
Toluene	20.0	22.6		ug/L		113	64 - 131
trans-1,2-Dichloroethene	20.0	22.1		ug/L		110	54 - 134
trans-1,3-Dichloropropene	20.0	21.4		ug/L		107	65 - 149
Trichloroethene	20.0	21.5		ug/L		108	62 - 135
Trichlorofluoromethane	20.0	23.3		ug/L		117	56 - 155
Vinyl chloride	20.0	22.1		ug/L		111	20 - 167
Xylenes, Total	40.0	44.6		ug/L		112	50 - 150
m,p-Xylenes	20.0	22.7		ug/L		113	64 - 133
o-Xylene	20.0	21.9		ug/L		110	61 - 129
Cyclohexane	20.0	23.0		ug/L		115	14 - 151
Methyl acetate	40.0	32.9		ug/L		82	70 - 130
Methylcyclohexane	20.0	23.3		ug/L		117	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*40 - 146*
4-Bromofluorobenzene (Surr)	*98*		*41 - 142*
Dibromofluoromethane (Surr)	*102*		*53 - 146*

Lab Sample ID: 660-125927-E-1 MS
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.80	U	20.0	21.3		ug/L		107	57 - 148
1,1,2,2-Tetrachloroethane	0.54	U	20.0	23.7		ug/L		118	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	20.0	22.6		ug/L		113	50 - 150
1,1,2-Trichloroethane	0.76	U	20.0	21.0		ug/L		105	57 - 141
1,1-Dichloroethane	0.62	U	20.0	21.4		ug/L		107	57 - 142
1,1-Dichloroethene	0.94	U	20.0	20.5		ug/L		103	49 - 139
1,2,4-Trichlorobenzene	0.70	U	20.0	22.8		ug/L		114	52 - 159
1,2-Dibromo-3-Chloropropane	0.96	U	20.0	20.6		ug/L		103	48 - 150
1,2-Dibromoethane (EDB)	0.78	U	20.0	20.7		ug/L		104	50 - 150
1,2-Dichloroethane	0.63	U	20.0	19.9		ug/L		99	50 - 156
1,2-Dichloropropane	0.80	U	20.0	21.9		ug/L		110	61 - 133
2-Butanone (MEK)	4.5	U	200	178		ug/L		89	10 - 180
2-Hexanone	2.5	U	200	235		ug/L		118	12 - 180
Acetone	25	U	200	163		ug/L		82	10 - 180
Benzene	0.71	U	20.0	22.1		ug/L		110	56 - 136
Bromodichloromethane	0.52	U	20.0	20.9		ug/L		104	58 - 135
Bromoform	0.75	U	20.0	20.7		ug/L		103	46 - 148
Bromomethane	0.95	U	20.0	16.4		ug/L		82	10 - 173
Carbon disulfide	2.5	U	20.0	19.5		ug/L		98	43 - 153
Carbon tetrachloride	0.94	U	20.0	22.4		ug/L		112	54 - 156
Chlorobenzene	0.72	U	20.0	21.4		ug/L		107	51 - 139
Chloroethane	0.98	U	20.0	21.7		ug/L		108	27 - 180
Chloroform	0.80	U	20.0	19.9		ug/L		99	59 - 139
Chloromethane	0.82	U	20.0	16.8		ug/L		84	33 - 154

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 660-125927-E-1 MS
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.53	U	20.0	21.7		ug/L		108	56 - 128
cis-1,3-Dichloropropene	0.59	U	20.0	19.6		ug/L		98	64 - 128
Dibromochloromethane	0.50	U	20.0	21.3		ug/L		106	50 - 150
Dichlorodifluoromethane	0.74	U	20.0	20.0		ug/L		100	10 - 180
Ethylbenzene	0.69	U	20.0	21.8		ug/L		109	63 - 133
Isopropylbenzene	0.67	U	20.0	22.2		ug/L		111	60 - 132
m-Dichlorobenzene	0.77	U	20.0	20.5		ug/L		103	66 - 129
Methyl tert-butyl ether	0.60	U	20.0	18.0		ug/L		90	50 - 150
Methylene Chloride	5.0	U	20.0	17.7		ug/L		88	43 - 142
o-Dichlorobenzene	0.73	U	20.0	19.9		ug/L		100	63 - 131
para-Dichlorobenzene	0.76	U	20.0	20.3		ug/L		102	65 - 133
Styrene	0.61	U	20.0	21.7		ug/L		108	59 - 136
Tetrachloroethene	0.76	U	20.0	19.4		ug/L		97	60 - 147
Toluene	0.72	U	20.0	21.1		ug/L		106	64 - 131
trans-1,2-Dichloroethene	0.73	U	20.0	21.2		ug/L		106	54 - 134
trans-1,3-Dichloropropene	0.73	U	20.0	19.2		ug/L		96	65 - 149
Trichloroethene	0.89	U	20.0	20.5		ug/L		102	62 - 135
Trichlorofluoromethane	0.94	U	20.0	21.9		ug/L		110	56 - 155
Vinyl chloride	0.71	U	20.0	20.5		ug/L		103	20 - 167
Xylenes, Total	1.3	U	40.0	42.2		ug/L		106	50 - 150
m,p-Xylenes	1.3	U	20.0	21.6		ug/L		108	64 - 133
o-Xylene	0.53	U	20.0	20.6		ug/L		103	61 - 129
Cyclohexane	0.93	U	20.0	24.3		ug/L		122	14 - 141
Methyl acetate	0.95	U	40.0	32.7		ug/L		82	50 - 150
Methylcyclohexane	0.50	U	20.0	23.9		ug/L		119	50 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*40 - 146*
4-Bromofluorobenzene (Surr)	*99*		*41 - 142*
Dibromofluoromethane (Surr)	*103*		*53 - 146*

Lab Sample ID: 660-125915-G-3 DU
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1,1,1-Trichloroethane	0.80	U	0.80	U	ug/L		NC	
1,1,2,2-Tetrachloroethane	0.54	U	0.54	U	ug/L		NC	
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	0.73	U	ug/L		NC	
1,1,2-Trichloroethane	0.76	U	0.76	U	ug/L		NC	
1,1-Dichloroethane	0.62	U	0.62	U	ug/L		NC	
1,1-Dichloroethene	0.94	U	0.94	U	ug/L		NC	
1,2,4-Trichlorobenzene	0.70	U	0.70	U	ug/L		NC	
1,2-Dibromo-3-Chloropropane	0.96	U	0.96	U	ug/L		NC	
1,2-Dibromoethane (EDB)	0.78	U	0.78	U	ug/L		NC	
1,2-Dichloroethane	0.63	U	0.63	U	ug/L		NC	
1,2-Dichloropropane	0.80	U	0.80	U	ug/L		NC	
2-Butanone (MEK)	4.5	U	4.5	U	ug/L		NC	

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 660-125915-G-3 DU
Matrix: Water
Analysis Batch: 16630

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2-Hexanone	2.5	U		2.5	U	ug/L				NC	
Acetone	25	U		25	U	ug/L				NC	
Benzene	0.71	U		0.71	U	ug/L				NC	
Bromodichloromethane	0.52	U		0.52	U	ug/L				NC	
Bromoform	0.75	U		0.75	U	ug/L				NC	
Bromomethane	0.95	U		0.95	U	ug/L				NC	
Carbon disulfide	2.5	U		2.5	U	ug/L				NC	
Carbon tetrachloride	0.94	U		0.94	U	ug/L				NC	
Chlorobenzene	0.72	U		0.72	U	ug/L				NC	
Chloroethane	0.98	U		0.98	U	ug/L				NC	
Chloroform	0.80	U		0.80	U	ug/L				NC	
Chloromethane	0.82	U		0.82	U	ug/L				NC	
cis-1,2-Dichloroethene	0.53	U		0.53	U	ug/L				NC	
cis-1,3-Dichloropropene	0.59	U		0.59	U	ug/L				NC	
Dibromochloromethane	0.50	U		0.50	U	ug/L				NC	
Dichlorodifluoromethane	0.74	U		0.74	U	ug/L				NC	
Ethylbenzene	0.69	U		0.69	U	ug/L				NC	
Isopropylbenzene	0.67	U		0.67	U	ug/L				NC	
m-Dichlorobenzene	0.77	U		0.77	U	ug/L				NC	
Methyl tert-butyl ether	0.60	U		0.60	U	ug/L				NC	
Methylene Chloride	5.0	U		5.0	U	ug/L				NC	
o-Dichlorobenzene	0.73	U		0.73	U	ug/L				NC	
para-Dichlorobenzene	0.76	U		0.76	U	ug/L				NC	
Styrene	0.61	U		0.61	U	ug/L				NC	
Tetrachloroethene	0.76	U		0.76	U	ug/L				NC	
Toluene	0.72	U		0.72	U	ug/L				NC	
trans-1,2-Dichloroethene	0.73	U		0.73	U	ug/L				NC	
trans-1,3-Dichloropropene	0.73	U		0.73	U	ug/L				NC	
Trichloroethene	0.89	U		0.89	U	ug/L				NC	
Trichlorofluoromethane	0.94	U		0.94	U	ug/L				NC	
Vinyl chloride	0.71	U		0.71	U	ug/L				NC	
Xylenes, Total	2.1			1.3	U	ug/L				NC	
m,p-Xylenes	1.6	I		1.3	U	ug/L				NC	
o-Xylene	0.53	I		0.53	U	ug/L				NC	
Cyclohexane	0.93	U		0.93	U	ug/L				NC	
Methyl acetate	0.95	U		0.95	U	ug/L				NC	
Methylcyclohexane	0.50	U		0.50	U	ug/L				NC	

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*40 - 146*
4-Bromofluorobenzene (Surr)	*96*		*41 - 142*
Dibromofluoromethane (Surr)	*101*		*53 - 146*

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

GC/MS VOA

Analysis Batch: 16630

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-11983-1	POL-MW0042SI-020.5-20221221	Total/NA	Ground Water	8260D	
670-11983-2 - DL	POL-MW0034S-010.0-20221221	Total/NA	Ground Water	8260D	
670-11983-3	POL-MW0045I-025.0-20221222	Total/NA	Ground Water	8260D	
670-11983-4	POL-MW0044D-035.0-20221222	Total/NA	Ground Water	8260D	
670-11983-5	POL-MW0043I-025.0-20221222	Total/NA	Ground Water	8260D	
670-11983-6	POL-MW0041SI-020.5-20221222	Total/NA	Ground Water	8260D	
670-11983-7	POL-MW0031S-010.0-20221222	Total/NA	Groundwater	8260D	
670-11983-8	POL-MW008I-027.5-20221222	Total/NA	Ground Water	8260D	
670-11983-9	POL-MW0036I-027.5-20221222	Total/NA	Ground Water	8260D	
670-11983-10	POL-MW0036SI-020.5-20221222	Total/NA	Groundwater	8260D	
MB 670-16630/6	Method Blank	Total/NA	Water	8260D	
LCS 670-16630/4	Lab Control Sample	Total/NA	Water	8260D	
660-125927-E-1 MS	Matrix Spike	Total/NA	Water	8260D	
660-125915-G-3 DU	Duplicate	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Client Sample ID: POL-MW0042SI-020.5-20221221
Lab Sample ID: 670-11983-1
Date Collected: 12/21/22 14:20
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 15:11

Client Sample ID: POL-MW0034S-010.0-20221221
Lab Sample ID: 670-11983-2
Date Collected: 12/21/22 15:20
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D	DL	25	16630	SK	EET ORL	01/03/23 15:49

Client Sample ID: POL-MW0045I-025.0-20221222
Lab Sample ID: 670-11983-3
Date Collected: 12/22/22 10:10
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 15:28

Client Sample ID: POL-MW0044D-035.0-20221222
Lab Sample ID: 670-11983-4
Date Collected: 12/22/22 11:35
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 16:07

Client Sample ID: POL-MW0043I-025.0-20221222
Lab Sample ID: 670-11983-5
Date Collected: 12/22/22 11:30
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 16:25

Client Sample ID: POL-MW0041SI-020.5-20221222
Lab Sample ID: 670-11983-6
Date Collected: 12/22/22 12:20
Matrix: Ground Water
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 16:43

Client Sample ID: POL-MW0031S-010.0-20221222
Lab Sample ID: 670-11983-7
Date Collected: 12/22/22 13:00
Matrix: Groundwater
Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 17:01

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Client Sample ID: POL-MW008I-027.5-20221222

Lab Sample ID: 670-11983-8

Date Collected: 12/22/22 13:50

Matrix: Ground Water

Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 17:19

Client Sample ID: POL-MW0036I-027.5-20221222

Lab Sample ID: 670-11983-9

Date Collected: 12/22/22 14:15

Matrix: Ground Water

Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 17:37

Client Sample ID: POL-MW0036SI-020.5-20221222

Lab Sample ID: 670-11983-10

Date Collected: 12/22/22 14:55

Matrix: Groundwater

Date Received: 12/22/22 16:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16630	SK	EET ORL	01/03/23 17:55

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Laboratory: Eurofins Orlando

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	01-08-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260D		Ground Water	Cyclohexane
8260D		Ground Water	m,p-Xylenes
8260D		Ground Water	Methyl acetate
8260D		Ground Water	Methylcyclohexane
8260D		Ground Water	o-Xylene
8260D		Groundwater	1,1,2-Trichloro-1,2,2-trifluoroethane
8260D		Groundwater	Cyclohexane
8260D		Groundwater	m,p-Xylenes
8260D		Groundwater	Methyl acetate
8260D		Groundwater	Methylcyclohexane
8260D		Groundwater	o-Xylene

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-11983-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-11983-1	POL-MW0042SI-020.5-20221221	Ground Water	12/21/22 14:20	12/22/22 16:50
670-11983-2	POL-MW0034S-010.0-20221221	Ground Water	12/21/22 15:20	12/22/22 16:50
670-11983-3	POL-MW0045I-025.0-20221222	Ground Water	12/22/22 10:10	12/22/22 16:50
670-11983-4	POL-MW0044D-035.0-20221222	Ground Water	12/22/22 11:35	12/22/22 16:50
670-11983-5	POL-MW0043I-025.0-20221222	Ground Water	12/22/22 11:30	12/22/22 16:50
670-11983-6	POL-MW0041SI-020.5-20221222	Ground Water	12/22/22 12:20	12/22/22 16:50
670-11983-7	POL-MW0031S-010.0-20221222	Groundwater	12/22/22 13:00	12/22/22 16:50
670-11983-8	POL-MW008I-027.5-20221222	Ground Water	12/22/22 13:50	12/22/22 16:50
670-11983-9	POL-MW0036I-027.5-20221222	Ground Water	12/22/22 14:15	12/22/22 16:50
670-11983-10	POL-MW0036SI-020.5-20221222	Groundwater	12/22/22 14:55	12/22/22 16:50

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 1678 | PAGE 1 OF 1

PROJECT NO: 112-90-9020	FACILITY: KSC NASA POL	PROJECT MANAGER Mark Jones	PHONE NUMBER 412-921-8622	LABORATORY NAME AND CONTACT: Eurofin Kaitlin Dykiehi
SAMPLERS (SIGNATURE) Robert Siegel, Natalie Fabbri		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER 321-591-7580	ADDRESS 481 Newburyport Ave
		CARRIER/WAYBILL NUMBER Lab # 67000968		CITY, STATE Altamont Springs FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

	DATE / YEAR	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS	COMMENTS
										6	6	HCl	Ice	8260B (MOD) POL custom list; 8260B (MOD) POL custom list	
✓	12/21	1420	POL-MW004 2S-020.5 20221222	42i	18.0	23.0	GW	G	6	3	3				
✓	12/21	1520	POL-MW0034S-010.0 20221222	34S	5.0	15.0	GW	G	6	3	3				
✓	12/22	1010	POL-MW0045I-025.0 20221222	45I	20.0	30.0	GW	G	6	3	3				
✓	12/22	1135	POL-MW004 4d-035.0 20221222	44d	30.0	40.0	GW	G	6	3	3				
✓	12/22	1130	POL-MW0043I-025.0-20221222	43I	20.0	30.0	GW	G	4	2	2				
✓	12/22	1220	POL-MW0041SI-020.5-20221222	41SI	18.0	23.0	GW	G	6	3	3				
✓	12/22	1300	POL-MW0031S-010.0 20221222	31S	5.0	15.0	GW	G	6	3	3				
✓	12/22	1350	POL-MW018I-027.5-20221222	8I	25.0	30.0	GW	G	6	3	3				
✓	12/22	1415	POL-MW0036I-027.5 20221222	36i	25.0	30.0	GW	G	6	3	3				
✓	12/22	1455	POL-MW0036SI-020.5-20221222	36Si	18.0	23.0	GW	G	6	3	3				

670-11983 Chain of Custody

1. RELINQUISHED BY Natalie	DATE 12-22-22	TIME 1530	1. RECEIVED BY Jennifer W Gregory	DATE 12/22/22	TIME 1530	
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY JMM	DATE 12/22/22	TIME 1650	
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME	

COMMENTS 0.5/0.4

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

1/23/2023

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-11983-1

Login Number: 11983
List Number: 1
Creator: McConnel, Jenna

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 1/23/2023 2:18:41 PM

JOB DESCRIPTION

NASA KSC POL

JOB NUMBER

670-12051-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

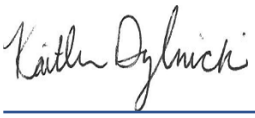
my EOL

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Job ID: 670-12051-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-12051-1

Receipt
The sample was received on 12/27/2022 4:45 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.5°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Client Sample ID: POL MW0009s.009.5 -20221227 — Lab Sample ID: 670-12051-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.0		1.0	0.53	ug/L	1		8260D	Total/NA
Trichloroethene	6.0		1.0	0.89	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Client Sample ID: POL MW0009s.009.5 -20221227
Date Collected: 12/27/22 09:10
Date Received: 12/27/22 16:45

Lab Sample ID: 670-12051-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			12/29/22 18:24	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			12/29/22 18:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			12/29/22 18:24	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			12/29/22 18:24	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			12/29/22 18:24	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/29/22 18:24	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			12/29/22 18:24	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			12/29/22 18:24	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			12/29/22 18:24	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			12/29/22 18:24	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			12/29/22 18:24	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			12/29/22 18:24	1
2-Hexanone	2.5	U	20	2.5	ug/L			12/29/22 18:24	1
Acetone	25	U	50	25	ug/L			12/29/22 18:24	1
Benzene	0.71	U	1.0	0.71	ug/L			12/29/22 18:24	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			12/29/22 18:24	1
Bromoform	0.75	U	1.0	0.75	ug/L			12/29/22 18:24	1
Bromomethane	0.95	U	2.0	0.95	ug/L			12/29/22 18:24	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			12/29/22 18:24	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			12/29/22 18:24	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			12/29/22 18:24	1
Chloroethane	0.98	U	2.0	0.98	ug/L			12/29/22 18:24	1
Chloroform	0.80	U	5.0	0.80	ug/L			12/29/22 18:24	1
Chloromethane	0.82	U	2.0	0.82	ug/L			12/29/22 18:24	1
cis-1,2-Dichloroethene	**1.0**		1.0	0.53	ug/L			12/29/22 18:24	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			12/29/22 18:24	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			12/29/22 18:24	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			12/29/22 18:24	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			12/29/22 18:24	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			12/29/22 18:24	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			12/29/22 18:24	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			12/29/22 18:24	1
Methylene Chloride	5.0	U	10	5.0	ug/L			12/29/22 18:24	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			12/29/22 18:24	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			12/29/22 18:24	1
Styrene	0.61	U	1.0	0.61	ug/L			12/29/22 18:24	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/29/22 18:24	1
Toluene	0.72	U	1.0	0.72	ug/L			12/29/22 18:24	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/29/22 18:24	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			12/29/22 18:24	1
Trichloroethene	**6.0**		1.0	0.89	ug/L			12/29/22 18:24	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			12/29/22 18:24	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/29/22 18:24	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			12/29/22 18:24	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			12/29/22 18:24	1
o-Xylene	0.53	U	1.0	0.53	ug/L			12/29/22 18:24	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			12/29/22 18:24	1
Methyl acetate	0.95	U	10	0.95	ug/L			12/29/22 18:24	1
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			12/29/22 18:24	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Client Sample ID: POL MW0009s.009.5 -20221227
Date Collected: 12/27/22 09:10
Date Received: 12/27/22 16:45

Lab Sample ID: 670-12051-1
Matrix: Ground Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/29/22 18:24	1
4-Bromofluorobenzene (Surr)	100		41 - 142		12/29/22 18:24	1
Dibromofluoromethane (Surr)	98		53 - 146		12/29/22 18:24	1

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(40-146)	(41-142)	(53-146)
670-12051-1	POL MW0009s.009.5 -2022122	99	100	98

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(40-146)	(41-142)	(53-146)
670-12056-K-1 MS	Matrix Spike	98	101	104
670-12056-L-3 DU	Duplicate	100	96	104
LCS 670-16300/4	Lab Control Sample	102	98	105
MB 670-16300/6	Method Blank	96	99	89

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-16300/6
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.80	U	1.0	0.80	ug/L			12/29/22 14:49	1
1,1,2,2-Tetrachloroethane	0.54	U	1.0	0.54	ug/L			12/29/22 14:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	2.0	0.73	ug/L			12/29/22 14:49	1
1,1,2-Trichloroethane	0.76	U	2.0	0.76	ug/L			12/29/22 14:49	1
1,1-Dichloroethane	0.62	U	1.0	0.62	ug/L			12/29/22 14:49	1
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/29/22 14:49	1
1,2,4-Trichlorobenzene	0.70	U	1.0	0.70	ug/L			12/29/22 14:49	1
1,2-Dibromo-3-Chloropropane	0.96	U	10	0.96	ug/L			12/29/22 14:49	1
1,2-Dibromoethane (EDB)	0.78	U	12	0.78	ug/L			12/29/22 14:49	1
1,2-Dichloroethane	0.63	U	1.0	0.63	ug/L			12/29/22 14:49	1
1,2-Dichloropropane	0.80	U	1.0	0.80	ug/L			12/29/22 14:49	1
2-Butanone (MEK)	4.5	U	10	4.5	ug/L			12/29/22 14:49	1
2-Hexanone	2.5	U	20	2.5	ug/L			12/29/22 14:49	1
Acetone	25	U	50	25	ug/L			12/29/22 14:49	1
Benzene	0.71	U	1.0	0.71	ug/L			12/29/22 14:49	1
Bromodichloromethane	0.52	U	1.0	0.52	ug/L			12/29/22 14:49	1
Bromoform	0.75	U	1.0	0.75	ug/L			12/29/22 14:49	1
Bromomethane	0.95	U	2.0	0.95	ug/L			12/29/22 14:49	1
Carbon disulfide	2.5	U	5.0	2.5	ug/L			12/29/22 14:49	1
Carbon tetrachloride	0.94	U	1.0	0.94	ug/L			12/29/22 14:49	1
Chlorobenzene	0.72	U	1.0	0.72	ug/L			12/29/22 14:49	1
Chloroethane	0.98	U	2.0	0.98	ug/L			12/29/22 14:49	1
Chloroform	0.80	U	5.0	0.80	ug/L			12/29/22 14:49	1
Chloromethane	0.82	U	2.0	0.82	ug/L			12/29/22 14:49	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/29/22 14:49	1
cis-1,3-Dichloropropene	0.59	U	1.0	0.59	ug/L			12/29/22 14:49	1
Dibromochloromethane	0.50	U	1.0	0.50	ug/L			12/29/22 14:49	1
Dichlorodifluoromethane	0.74	U	1.0	0.74	ug/L			12/29/22 14:49	1
Ethylbenzene	0.69	U	1.0	0.69	ug/L			12/29/22 14:49	1
Isopropylbenzene	0.67	U	2.0	0.67	ug/L			12/29/22 14:49	1
m-Dichlorobenzene	0.77	U	1.0	0.77	ug/L			12/29/22 14:49	1
Methyl tert-butyl ether	0.60	U	2.0	0.60	ug/L			12/29/22 14:49	1
Methylene Chloride	5.0	U	10	5.0	ug/L			12/29/22 14:49	1
o-Dichlorobenzene	0.73	U	1.0	0.73	ug/L			12/29/22 14:49	1
para-Dichlorobenzene	0.76	U	1.0	0.76	ug/L			12/29/22 14:49	1
Styrene	0.61	U	1.0	0.61	ug/L			12/29/22 14:49	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/29/22 14:49	1
Toluene	0.72	U	1.0	0.72	ug/L			12/29/22 14:49	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/29/22 14:49	1
trans-1,3-Dichloropropene	0.73	U	1.0	0.73	ug/L			12/29/22 14:49	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/29/22 14:49	1
Trichlorofluoromethane	0.94	U	1.0	0.94	ug/L			12/29/22 14:49	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/29/22 14:49	1
Xylenes, Total	1.3	U	2.0	1.3	ug/L			12/29/22 14:49	1
m,p-Xylenes	1.3	U	2.0	1.3	ug/L			12/29/22 14:49	1
o-Xylene	0.53	U	1.0	0.53	ug/L			12/29/22 14:49	1
Cyclohexane	0.93	U	5.0	0.93	ug/L			12/29/22 14:49	1
Methyl acetate	0.95	U	10	0.95	ug/L			12/29/22 14:49	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 670-16300/6
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.50	U	5.0	0.50	ug/L			12/29/22 14:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*40 - 146*		*12/29/22 14:49*	*1*
4-Bromofluorobenzene (Surr)	*99*		*41 - 142*		*12/29/22 14:49*	*1*
Dibromofluoromethane (Surr)	*89*		*53 - 146*		*12/29/22 14:49*	*1*

Lab Sample ID: LCS 670-16300/4
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	20.0	21.4		ug/L		107	57 - 148
1,1,2,2-Tetrachloroethane	20.0	23.0		ug/L		115	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	23.1		ug/L		116	47 - 173
1,1,2-Trichloroethane	20.0	22.3		ug/L		112	57 - 141
1,1-Dichloroethane	20.0	22.5		ug/L		113	57 - 142
1,1-Dichloroethene	20.0	22.4		ug/L		112	47 - 139
1,2,4-Trichlorobenzene	20.0	23.6		ug/L		118	52 - 159
1,2-Dibromo-3-Chloropropane	20.0	19.5		ug/L		97	48 - 150
1,2-Dibromoethane (EDB)	20.0	20.9		ug/L		104	57 - 140
1,2-Dichloroethane	20.0	21.4		ug/L		107	50 - 156
1,2-Dichloropropane	20.0	22.1		ug/L		111	61 - 133
2-Butanone (MEK)	200	180		ug/L		90	10 - 180
2-Hexanone	200	218		ug/L		109	12 - 180
Acetone	200	185		ug/L		92	10 - 180
Benzene	20.0	22.9		ug/L		114	56 - 136
Bromodichloromethane	20.0	21.8		ug/L		109	58 - 135
Bromoform	20.0	20.5		ug/L		103	46 - 148
Bromomethane	20.0	19.6		ug/L		98	10 - 173
Carbon disulfide	20.0	21.8		ug/L		109	43 - 153
Carbon tetrachloride	20.0	22.0		ug/L		110	54 - 156
Chlorobenzene	20.0	21.3		ug/L		107	51 - 139
Chloroethane	20.0	21.1		ug/L		105	27 - 180
Chloroform	20.0	21.2		ug/L		106	58 - 139
Chloromethane	20.0	20.5		ug/L		103	33 - 154
cis-1,2-Dichloroethene	20.0	23.4		ug/L		117	56 - 128
cis-1,3-Dichloropropene	20.0	22.3		ug/L		111	64 - 128
Dibromochloromethane	20.0	22.2		ug/L		111	50 - 140
Dichlorodifluoromethane	20.0	24.9		ug/L		125	10 - 180
Ethylbenzene	20.0	21.5		ug/L		108	63 - 133
Isopropylbenzene	20.0	21.8		ug/L		109	60 - 132
m-Dichlorobenzene	20.0	22.2		ug/L		111	66 - 129
Methyl tert-butyl ether	20.0	19.7		ug/L		98	51 - 145
Methylene Chloride	20.0	24.6		ug/L		123	43 - 142
o-Dichlorobenzene	20.0	21.9		ug/L		110	63 - 131
para-Dichlorobenzene	20.0	22.2		ug/L		111	65 - 133
Styrene	20.0	22.3		ug/L		112	59 - 136

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 670-16300/4
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Tetrachloroethene	20.0	21.0		ug/L		105	60 - 147
Toluene	20.0	21.7		ug/L		108	64 - 131
trans-1,2-Dichloroethene	20.0	22.5		ug/L		113	54 - 134
trans-1,3-Dichloropropene	20.0	21.7		ug/L		108	65 - 149
Trichloroethene	20.0	22.7		ug/L		113	62 - 135
Trichlorofluoromethane	20.0	24.1		ug/L		121	56 - 155
Vinyl chloride	20.0	23.8		ug/L		119	20 - 167
Xylenes, Total	40.0	42.0		ug/L		105	50 - 150
m,p-Xylenes	20.0	21.2		ug/L		106	64 - 133
o-Xylene	20.0	20.8		ug/L		104	61 - 129
Cyclohexane	20.0	22.7		ug/L		114	14 - 151
Methyl acetate	40.0	37.1		ug/L		93	70 - 130
Methylcyclohexane	20.0	22.5		ug/L		112	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*40 - 146*
4-Bromofluorobenzene (Surr)	*98*		*41 - 142*
Dibromofluoromethane (Surr)	*105*		*53 - 146*

Lab Sample ID: 670-12056-K-1 MS
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.80	U	20.0	24.9		ug/L		124	57 - 148
1,1,2,2-Tetrachloroethane	0.54	U J3	20.0	29.2	J3	ug/L		146	60 - 139
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	20.0	23.8		ug/L		119	50 - 150
1,1,2-Trichloroethane	0.76	U	20.0	25.3		ug/L		126	57 - 141
1,1-Dichloroethane	0.62	U	20.0	24.0		ug/L		120	57 - 142
1,1-Dichloroethene	0.94	U	20.0	23.7		ug/L		119	49 - 139
1,2,4-Trichlorobenzene	0.70	U	20.0	29.2		ug/L		146	52 - 159
1,2-Dibromo-3-Chloropropane	0.96	U	20.0	26.0		ug/L		130	48 - 150
1,2-Dibromoethane (EDB)	0.78	U	20.0	23.2		ug/L		116	50 - 150
1,2-Dichloroethane	0.63	U	20.0	22.9		ug/L		114	50 - 156
1,2-Dichloropropane	0.80	U	20.0	24.7		ug/L		124	61 - 133
2-Butanone (MEK)	4.5	U	200	242		ug/L		121	10 - 180
2-Hexanone	2.5	U	200	295		ug/L		147	12 - 180
Acetone	25	U	200	228		ug/L		114	10 - 180
Benzene	1.9		20.0	27.6		ug/L		128	56 - 136
Bromodichloromethane	0.52	U	20.0	23.1		ug/L		115	58 - 135
Bromoform	0.75	U	20.0	24.4		ug/L		122	46 - 148
Bromomethane	0.95	U	20.0	21.5		ug/L		107	10 - 173
Carbon disulfide	2.5	U	20.0	23.2		ug/L		116	43 - 153
Carbon tetrachloride	0.94	U	20.0	24.9		ug/L		124	54 - 156
Chlorobenzene	0.72	U	20.0	23.8		ug/L		119	51 - 139
Chloroethane	0.98	U	20.0	23.5		ug/L		117	27 - 180
Chloroform	0.80	U	20.0	21.6		ug/L		108	59 - 139
Chloromethane	0.82	U	20.0	23.7		ug/L		119	33 - 154

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 670-12056-K-1 MS
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.53	U	20.0	25.2		ug/L		126	56 - 128
cis-1,3-Dichloropropene	0.59	U	20.0	23.2		ug/L		116	64 - 128
Dibromochloromethane	0.50	U	20.0	24.1		ug/L		121	50 - 150
Dichlorodifluoromethane	0.74	U	20.0	30.6		ug/L		153	10 - 180
Ethylbenzene	7.9		20.0	32.2		ug/L		121	63 - 133
Isopropylbenzene	12		20.0	37.2		ug/L		124	60 - 132
m-Dichlorobenzene	0.77	U	20.0	25.0		ug/L		125	66 - 129
Methyl tert-butyl ether	0.60	U	20.0	22.5		ug/L		112	50 - 150
Methylene Chloride	5.0	U	20.0	20.9		ug/L		105	43 - 142
o-Dichlorobenzene	0.73	U	20.0	24.9		ug/L		124	63 - 131
para-Dichlorobenzene	0.76	U	20.0	24.5		ug/L		123	65 - 133
Styrene	0.61	U	20.0	23.7		ug/L		118	59 - 136
Tetrachloroethene	0.76	U	20.0	19.3		ug/L		96	60 - 147
Toluene	0.72	U	20.0	24.2		ug/L		121	64 - 131
trans-1,2-Dichloroethene	0.73	U	20.0	23.9		ug/L		120	54 - 134
trans-1,3-Dichloropropene	0.73	U	20.0	23.7		ug/L		118	65 - 149
Trichloroethene	0.89	U	20.0	23.1		ug/L		115	62 - 135
Trichlorofluoromethane	0.94	U	20.0	29.8		ug/L		149	56 - 155
Vinyl chloride	0.71	U	20.0	29.3		ug/L		146	20 - 167
Xylenes, Total	2.2		40.0	50.1		ug/L		120	50 - 150
m,p-Xylenes	2.2		20.0	26.8		ug/L		123	64 - 133
o-Xylene	0.53	U	20.0	23.3		ug/L		117	61 - 129
Cyclohexane	0.93	U	20.0	27.5		ug/L		137	14 - 141
Methyl acetate	0.95	U	40.0	44.8		ug/L		112	50 - 150
Methylcyclohexane	2.6	I	20.0	28.8		ug/L		131	50 - 150

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*40 - 146*
4-Bromofluorobenzene (Surr)	*101*		*41 - 142*
Dibromofluoromethane (Surr)	*104*		*53 - 146*

Lab Sample ID: 670-12056-L-3 DU
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
1,1,1-Trichloroethane	0.80	U	0.80	U	ug/L		NC	30
1,1,2,2-Tetrachloroethane	0.54	U	0.54	U	ug/L		NC	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.73	U	0.73	U	ug/L		NC	30
1,1,2-Trichloroethane	0.76	U	0.76	U	ug/L		NC	30
1,1-Dichloroethane	0.62	U	0.62	U	ug/L		NC	30
1,1-Dichloroethene	0.94	U	0.94	U	ug/L		NC	30
1,2,4-Trichlorobenzene	0.70	U	0.70	U	ug/L		NC	30
1,2-Dibromo-3-Chloropropane	0.96	U	0.96	U	ug/L		NC	30
1,2-Dibromoethane (EDB)	0.78	U	0.78	U	ug/L		NC	30
1,2-Dichloroethane	0.63	U	0.63	U	ug/L		NC	30
1,2-Dichloropropane	0.80	U	0.80	U	ug/L		NC	30
2-Butanone (MEK)	4.5	U	4.5	U	ug/L		NC	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 670-12056-L-3 DU
Matrix: Water
Analysis Batch: 16300

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
2-Hexanone	2.5	U		2.5	U	ug/L				NC	30
Acetone	25	U		25	U	ug/L				NC	30
Benzene	0.71	U		0.71	U	ug/L				NC	30
Bromodichloromethane	0.52	U		0.52	U	ug/L				NC	30
Bromoform	0.75	U		0.75	U	ug/L				NC	30
Bromomethane	0.95	U		0.95	U	ug/L				NC	30
Carbon disulfide	2.5	U		2.5	U	ug/L				NC	30
Carbon tetrachloride	0.94	U		0.94	U	ug/L				NC	30
Chlorobenzene	0.72	U		0.72	U	ug/L				NC	30
Chloroethane	0.98	U		0.98	U	ug/L				NC	30
Chloroform	0.80	U		0.80	U	ug/L				NC	30
Chloromethane	0.82	U		0.82	U	ug/L				NC	30
cis-1,2-Dichloroethene	0.53	U		0.53	U	ug/L				NC	30
cis-1,3-Dichloropropene	0.59	U		0.59	U	ug/L				NC	30
Dibromochloromethane	0.50	U		0.50	U	ug/L				NC	30
Dichlorodifluoromethane	0.74	U		0.74	U	ug/L				NC	30
Ethylbenzene	0.69	U		0.69	U	ug/L				NC	30
Isopropylbenzene	0.67	U		0.67	U	ug/L				NC	30
m-Dichlorobenzene	0.77	U		0.77	U	ug/L				NC	30
Methyl tert-butyl ether	0.60	U		0.60	U	ug/L				NC	30
Methylene Chloride	5.0	U		5.0	U	ug/L				NC	30
o-Dichlorobenzene	0.73	U		0.73	U	ug/L				NC	30
para-Dichlorobenzene	0.76	U		0.76	U	ug/L				NC	30
Styrene	0.61	U		0.61	U	ug/L				NC	30
Tetrachloroethene	0.76	U		0.76	U	ug/L				NC	30
Toluene	0.72	U		0.72	U	ug/L				NC	30
trans-1,2-Dichloroethene	0.73	U		0.73	U	ug/L				NC	20
trans-1,3-Dichloropropene	0.73	U		0.73	U	ug/L				NC	30
Trichloroethene	0.89	U		0.89	U	ug/L				NC	30
Trichlorofluoromethane	0.94	U		0.94	U	ug/L				NC	30
Vinyl chloride	0.71	U		0.71	U	ug/L				NC	30
Xylenes, Total	1.3	U		1.3	U	ug/L				NC	30
m,p-Xylenes	1.3	U		1.3	U	ug/L				NC	30
o-Xylene	0.53	U		0.53	U	ug/L				NC	30
Cyclohexane	0.93	U		0.93	U	ug/L				NC	30
Methyl acetate	0.95	U		0.95	U	ug/L				NC	30
Methylcyclohexane	0.50	U		0.50	U	ug/L				NC	30

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*40 - 146*
4-Bromofluorobenzene (Surr)	*96*		*41 - 142*
Dibromofluoromethane (Surr)	*104*		*53 - 146*

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

GC/MS VOA

Analysis Batch: 16300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-12051-1	POL MW0009s.009.5 -20221227	Total/NA	Ground Water	8260D	
MB 670-16300/6	Method Blank	Total/NA	Water	8260D	
LCS 670-16300/4	Lab Control Sample	Total/NA	Water	8260D	
670-12056-K-1 MS	Matrix Spike	Total/NA	Water	8260D	
670-12056-L-3 DU	Duplicate	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Client Sample ID: POL MW0009s.009.5 -20221227
Date Collected: 12/27/22 09:10
Date Received: 12/27/22 16:45

Lab Sample ID: 670-12051-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	16300	K1P	EET ORL	12/29/22 18:24

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Laboratory: Eurofins Orlando

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	01-08-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Ground Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260D		Ground Water	Cyclohexane
8260D		Ground Water	m,p-Xylenes
8260D		Ground Water	Methyl acetate
8260D		Ground Water	Methylcyclohexane
8260D		Ground Water	o-Xylene

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-12051-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-12051-1	POL MW0009s.009.5 -20221227	Ground Water	12/27/22 09:10	12/27/22 16:45

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 2292 | PAGE 1 OF 1

PROJECT NO: 112G09020	FACILITY: KSC NASA POL	PROJECT MANAGER Mark Jamet	PHONE NUMBER 412-921-8622	LABORATORY NAME AND CONTACT: Eurofins / Kaitlin Dylnicki
SAMPLERS (SIGNATURE) Robert Siegel		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER 321-591-7580	ADDRESS 481 Newburyport Ave
		~~CARRIER/WAYBILL NUMBER~~ Lab ID 670000968		CITY, STATE Altamonte Springs FL

STANDARD TAT ☒
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2022	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS: 8260d (mod) VOCs POL Custom List	TYPE OF ANALYSIS: 8260d (mod) VOCs POL Custom List	COMMENTS
12/27	0910	POL MW0009S-0095-2022 1227	9S	7.0	12.0	GW	G	6	P	P	HCl	Ice	3	3	

670-12051 Chain of Custody

1. RELINQUISHED BY RSiegel	DATE 12/27/22	TIME 1330	1. RECEIVED BY James W Gregory	DATE 12/27/22	TIME 1330		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME 1645		
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME		

COMMENTS 1.6 / 4.5

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

1/23/2023

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-12051-1

Login Number: 12051
List Number: 1
Creator: Clerisier, Meline

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 7/25/2023 12:12:00 PM Revision 1

JOB DESCRIPTION

NASA KSC POL Airs

JOB NUMBER

670-12822-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

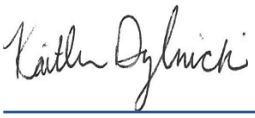
my EOL

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Revision 1

Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Job ID: 670-12822-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-12822-1

Revision
The report being provided is a revision of the original report sent on 1/27/2023. The report (revision 1) is being revised to update the results reported in ug/m3.

Receipt
The samples were received on 1/11/2023 9:36 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice.

Receipt Exceptions
POL-AMB7-20230109 (670-12822-1) and POL-AMB5-20230109 (670-12822-3) were listed in different orders between the Field Data Chain and the Tetra Tech Chain of Custody. Samples were logged by the Field Test Data Chain.

Air - GC/MS VOA

Method TO15: The continuing calibration verification (CCV) and or initial calibration for multiple batches may have exceedances for multiple analytes, unless noted above, analyte(s) not part of target analyte list.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB7-20230109 — Lab Sample ID: 670-12822-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.64	I	1.0	0.21	ppb v/v	1		TO-15	Total/NA
Acetone	3.7	I	5.0	0.53	ppb v/v	1		TO-15	Total/NA
Carbon disulfide	0.22	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Chloromethane	0.52	I	1.0	0.24	ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	0.51	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	0.22	I	1.0	0.15	ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.9	I	2.9	0.62	ug/m3	1		TO-15	Total/NA
Acetone	8.8	I	12	1.3	ug/m3	1		TO-15	Total/NA
Carbon disulfide	0.67	I	3.1	0.40	ug/m3	1		TO-15	Total/NA
Chloromethane	1.1	I	2.1	0.50	ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	2.5	I	4.9	0.64	ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	1.3	I	5.6	0.84	ug/m3	1		TO-15	Total/NA

Client Sample ID: POL-AMB6-20230109 — Lab Sample ID: 670-12822-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.84	I	1.0	0.21	ppb v/v	1		TO-15	Total/NA
2-Hexanone	0.21	I	2.0	0.18	ppb v/v	1		TO-15	Total/NA
Acetone	4.2	I	5.0	0.53	ppb v/v	1		TO-15	Total/NA
Carbon disulfide	0.19	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	0.56	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	0.22	I	1.0	0.15	ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	2.5	I	2.9	0.62	ug/m3	1		TO-15	Total/NA
2-Hexanone	0.87	I	8.2	0.74	ug/m3	1		TO-15	Total/NA
Acetone	9.9	I	12	1.3	ug/m3	1		TO-15	Total/NA
Carbon disulfide	0.59	I	3.1	0.40	ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	2.8	I	4.9	0.64	ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	1.2	I	5.6	0.84	ug/m3	1		TO-15	Total/NA

Client Sample ID: POL-AMB5-20230109 — Lab Sample ID: 670-12822-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.76	I	1.0	0.21	ppb v/v	1		TO-15	Total/NA
2-Hexanone	0.23	I	2.0	0.18	ppb v/v	1		TO-15	Total/NA
Acetone	4.6	I	5.0	0.53	ppb v/v	1		TO-15	Total/NA
Benzene	0.12	I	1.0	0.11	ppb v/v	1		TO-15	Total/NA
Carbon disulfide	0.25	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Chloromethane	0.57	I	1.0	0.24	ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	0.55	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Toluene	0.12	I	1.0	0.12	ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	0.21	I	1.0	0.15	ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	2.2	I	2.9	0.62	ug/m3	1		TO-15	Total/NA
2-Hexanone	0.92	I	8.2	0.74	ug/m3	1		TO-15	Total/NA
Acetone	11	I	12	1.3	ug/m3	1		TO-15	Total/NA
Benzene	0.39	I	3.2	0.35	ug/m3	1		TO-15	Total/NA
Carbon disulfide	0.78	I	3.1	0.40	ug/m3	1		TO-15	Total/NA
Chloromethane	1.2	I	2.1	0.50	ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	2.7	I	4.9	0.64	ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: POL-AMB5-20230109 (Continued) — Lab Sample ID: 670-12822-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.43	I	3.8	0.45	ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	1.2	I	5.6	0.84	ug/m3	1		TO-15	Total/NA

Client Sample ID: POL-AMB8-20230109 — Lab Sample ID: 670-12822-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.78	I	1.0	0.21	ppb v/v	1		TO-15	Total/NA
2-Hexanone	0.18	I	2.0	0.18	ppb v/v	1		TO-15	Total/NA
Acetone	4.0	I	5.0	0.53	ppb v/v	1		TO-15	Total/NA
Chloromethane	0.42	I	1.0	0.24	ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	0.40	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Toluene	0.19	I	1.0	0.12	ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	0.20	I	1.0	0.15	ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	2.3	I	2.9	0.62	ug/m3	1		TO-15	Total/NA
2-Hexanone	0.75	I	8.2	0.74	ug/m3	1		TO-15	Total/NA
Acetone	9.4	I	12	1.3	ug/m3	1		TO-15	Total/NA
Chloromethane	0.86	I	2.1	0.50	ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	2.0	I	4.9	0.64	ug/m3	1		TO-15	Total/NA
Toluene	0.72	I	3.8	0.45	ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	1.1	I	5.6	0.84	ug/m3	1		TO-15	Total/NA

Client Sample ID: POL-AMB9-20230109 — Lab Sample ID: 670-12822-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	0.61	I	1.0	0.21	ppb v/v	1		TO-15	Total/NA
2-Hexanone	0.22	I	2.0	0.18	ppb v/v	1		TO-15	Total/NA
Acetone	4.0	I	5.0	0.53	ppb v/v	1		TO-15	Total/NA
Chloromethane	0.40	I	1.0	0.24	ppb v/v	1		TO-15	Total/NA
Dichlorodifluoromethane	0.53	I	1.0	0.13	ppb v/v	1		TO-15	Total/NA
Trichlorofluoromethane	0.22	I	1.0	0.15	ppb v/v	1		TO-15	Total/NA

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
2-Butanone	1.8	I	2.9	0.62	ug/m3	1		TO-15	Total/NA
2-Hexanone	0.89	I	8.2	0.74	ug/m3	1		TO-15	Total/NA
Acetone	9.4	I	12	1.3	ug/m3	1		TO-15	Total/NA
Chloromethane	0.82	I	2.1	0.50	ug/m3	1		TO-15	Total/NA
Dichlorodifluoromethane	2.6	I	4.9	0.64	ug/m3	1		TO-15	Total/NA
Trichlorofluoromethane	1.2	I	5.6	0.84	ug/m3	1		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: POL-AMB7-20230109

Lab Sample ID: 670-12822-1

Date Collected: 01/09/23 13:20
Matrix: Air
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/17/23 13:52	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/17/23 13:52	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/17/23 13:52	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/17/23 13:52	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 13:52	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/17/23 13:52	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/17/23 13:52	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 13:52	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 13:52	1
2-Butanone	**0.64**	**I**	1.0	0.21	ppb v/v			01/17/23 13:52	1
2-Hexanone	0.18	U	2.0	0.18	ppb v/v			01/17/23 13:52	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/17/23 13:52	1
Acetone	**3.7**	**I**	5.0	0.53	ppb v/v			01/17/23 13:52	1
Benzene	0.11	U	1.0	0.11	ppb v/v			01/17/23 13:52	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/17/23 13:52	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
Carbon disulfide	**0.22**	**I**	1.0	0.13	ppb v/v			01/17/23 13:52	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/17/23 13:52	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/17/23 13:52	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/17/23 13:52	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/17/23 13:52	1
Chloromethane	**0.52**	**I**	1.0	0.24	ppb v/v			01/17/23 13:52	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/17/23 13:52	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 13:52	1
Dichlorodifluoromethane	**0.51**	**I**	1.0	0.13	ppb v/v			01/17/23 13:52	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/17/23 13:52	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
Cyclohexane	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/17/23 13:52	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/17/23 13:52	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/17/23 13:52	1
Toluene	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 13:52	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/17/23 13:52	1
Trichlorofluoromethane	**0.22**	**I**	1.0	0.15	ppb v/v			01/17/23 13:52	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/17/23 13:52	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/17/23 13:52	1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 13:52	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/17/23 13:52	1
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 13:52	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB7-20230109
Date Collected: 01/09/23 13:20
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Lab Sample ID: 670-12822-1
Matrix: Air

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/17/23 13:52	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/17/23 13:52	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/17/23 13:52	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/17/23 13:52	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/17/23 13:52	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/17/23 13:52	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/17/23 13:52	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 13:52	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 13:52	1
2-Butanone	**1.9**	**I**	2.9	0.62	ug/m3			01/17/23 13:52	1
2-Hexanone	0.74	U	8.2	0.74	ug/m3			01/17/23 13:52	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/17/23 13:52	1
Acetone	**8.8**	**I**	12	1.3	ug/m3			01/17/23 13:52	1
Benzene	0.35	U	3.2	0.35	ug/m3			01/17/23 13:52	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/17/23 13:52	1
Bromoform	1.8	U	10	1.8	ug/m3			01/17/23 13:52	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/17/23 13:52	1
Carbon disulfide	**0.67**	**I**	3.1	0.40	ug/m3			01/17/23 13:52	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/17/23 13:52	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/17/23 13:52	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/17/23 13:52	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/17/23 13:52	1
Chloromethane	**1.1**	**I**	2.1	0.50	ug/m3			01/17/23 13:52	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 13:52	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/17/23 13:52	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/17/23 13:52	1
Dichlorodifluoromethane	**2.5**	**I**	4.9	0.64	ug/m3			01/17/23 13:52	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/17/23 13:52	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/17/23 13:52	1
Cyclohexane	0.69	U	3.4	0.69	ug/m3			01/17/23 13:52	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/17/23 13:52	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/17/23 13:52	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/17/23 13:52	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/17/23 13:52	1
Toluene	0.45	U	3.8	0.45	ug/m3			01/17/23 13:52	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 13:52	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/17/23 13:52	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/17/23 13:52	1
Trichlorofluoromethane	**1.3**	**I**	5.6	0.84	ug/m3			01/17/23 13:52	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/17/23 13:52	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/17/23 13:52	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB6-20230109

Lab Sample ID: 670-12822-2

Date Collected: 01/09/23 15:30
Matrix: Air
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:21	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/17/23 14:21	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/17/23 14:21	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/17/23 14:21	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:21	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/17/23 14:21	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:21	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:21	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:21	1
2-Butanone	**0.84**	**I**	1.0	0.21	ppb v/v			01/17/23 14:21	1
2-Hexanone	**0.21**	**I**	2.0	0.18	ppb v/v			01/17/23 14:21	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:21	1
Acetone	**4.2**	**I**	5.0	0.53	ppb v/v			01/17/23 14:21	1
Benzene	0.11	U	1.0	0.11	ppb v/v			01/17/23 14:21	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/17/23 14:21	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
Carbon disulfide	**0.19**	**I**	1.0	0.13	ppb v/v			01/17/23 14:21	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/17/23 14:21	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:21	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:21	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/17/23 14:21	1
Chloromethane	0.24	U	1.0	0.24	ppb v/v			01/17/23 14:21	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/17/23 14:21	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:21	1
Dichlorodifluoromethane	**0.56**	**I**	1.0	0.13	ppb v/v			01/17/23 14:21	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/17/23 14:21	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
Cyclohexane	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:21	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/17/23 14:21	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/17/23 14:21	1
Toluene	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:21	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/17/23 14:21	1
Trichlorofluoromethane	**0.22**	**I**	1.0	0.15	ppb v/v			01/17/23 14:21	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:21	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/17/23 14:21	1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 14:21	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/17/23 14:21	1
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 14:21	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB6-20230109
Date Collected: 01/09/23 15:30
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Lab Sample ID: 670-12822-2
Matrix: Air

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/17/23 14:21	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/17/23 14:21	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/17/23 14:21	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/17/23 14:21	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/17/23 14:21	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/17/23 14:21	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/17/23 14:21	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 14:21	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 14:21	1
2-Butanone	**2.5**	**I**	2.9	0.62	ug/m3			01/17/23 14:21	1
2-Hexanone	**0.87**	**I**	8.2	0.74	ug/m3			01/17/23 14:21	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/17/23 14:21	1
Acetone	**9.9**	**I**	12	1.3	ug/m3			01/17/23 14:21	1
Benzene	0.35	U	3.2	0.35	ug/m3			01/17/23 14:21	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/17/23 14:21	1
Bromoform	1.8	U	10	1.8	ug/m3			01/17/23 14:21	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/17/23 14:21	1
Carbon disulfide	**0.59**	**I**	3.1	0.40	ug/m3			01/17/23 14:21	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/17/23 14:21	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/17/23 14:21	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/17/23 14:21	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/17/23 14:21	1
Chloromethane	0.50	U	2.1	0.50	ug/m3			01/17/23 14:21	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 14:21	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/17/23 14:21	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/17/23 14:21	1
Dichlorodifluoromethane	**2.8**	**I**	4.9	0.64	ug/m3			01/17/23 14:21	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/17/23 14:21	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/17/23 14:21	1
Cyclohexane	0.69	U	3.4	0.69	ug/m3			01/17/23 14:21	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/17/23 14:21	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/17/23 14:21	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/17/23 14:21	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/17/23 14:21	1
Toluene	0.45	U	3.8	0.45	ug/m3			01/17/23 14:21	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 14:21	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/17/23 14:21	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/17/23 14:21	1
Trichlorofluoromethane	**1.2**	**I**	5.6	0.84	ug/m3			01/17/23 14:21	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/17/23 14:21	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/17/23 14:21	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB5-20230109

Lab Sample ID: 670-12822-3

Date Collected: 01/09/23 15:35
Matrix: Air
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:50	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:50	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:50	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/17/23 14:50	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/17/23 14:50	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/17/23 14:50	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:50	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/17/23 14:50	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:50	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:50	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:50	1
2-Butanone	**0.76**	**I**	1.0	0.21	ppb v/v			01/17/23 14:50	1
2-Hexanone	**0.23**	**I**	2.0	0.18	ppb v/v			01/17/23 14:50	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:50	1
Acetone	**4.6**	**I**	5.0	0.53	ppb v/v			01/17/23 14:50	1
Benzene	**0.12**	**I**	1.0	0.11	ppb v/v			01/17/23 14:50	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:50	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/17/23 14:50	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
Carbon disulfide	**0.25**	**I**	1.0	0.13	ppb v/v			01/17/23 14:50	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/17/23 14:50	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:50	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/17/23 14:50	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/17/23 14:50	1
Chloromethane	**0.57**	**I**	1.0	0.24	ppb v/v			01/17/23 14:50	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/17/23 14:50	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 14:50	1
Dichlorodifluoromethane	**0.55**	**I**	1.0	0.13	ppb v/v			01/17/23 14:50	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/17/23 14:50	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
Cyclohexane	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/17/23 14:50	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/17/23 14:50	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/17/23 14:50	1
Toluene	**0.12**	**I**	1.0	0.12	ppb v/v			01/17/23 14:50	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 14:50	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:50	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/17/23 14:50	1
Trichlorofluoromethane	**0.21**	**I**	1.0	0.15	ppb v/v			01/17/23 14:50	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/17/23 14:50	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/17/23 14:50	1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 14:50	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/17/23 14:50	1
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 14:50	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB5-20230109
Date Collected: 01/09/23 15:35
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Lab Sample ID: 670-12822-3
Matrix: Air

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/17/23 14:50	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/17/23 14:50	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/17/23 14:50	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/17/23 14:50	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/17/23 14:50	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/17/23 14:50	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/17/23 14:50	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 14:50	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 14:50	1
2-Butanone	**2.2**	**I**	2.9	0.62	ug/m3			01/17/23 14:50	1
2-Hexanone	**0.92**	**I**	8.2	0.74	ug/m3			01/17/23 14:50	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/17/23 14:50	1
Acetone	**11**	**I**	12	1.3	ug/m3			01/17/23 14:50	1
Benzene	**0.39**	**I**	3.2	0.35	ug/m3			01/17/23 14:50	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/17/23 14:50	1
Bromoform	1.8	U	10	1.8	ug/m3			01/17/23 14:50	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/17/23 14:50	1
Carbon disulfide	**0.78**	**I**	3.1	0.40	ug/m3			01/17/23 14:50	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/17/23 14:50	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/17/23 14:50	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/17/23 14:50	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/17/23 14:50	1
Chloromethane	**1.2**	**I**	2.1	0.50	ug/m3			01/17/23 14:50	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 14:50	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/17/23 14:50	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/17/23 14:50	1
Dichlorodifluoromethane	**2.7**	**I**	4.9	0.64	ug/m3			01/17/23 14:50	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/17/23 14:50	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/17/23 14:50	1
Cyclohexane	0.69	U	3.4	0.69	ug/m3			01/17/23 14:50	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/17/23 14:50	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/17/23 14:50	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/17/23 14:50	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/17/23 14:50	1
Toluene	**0.43**	**I**	3.8	0.45	ug/m3			01/17/23 14:50	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 14:50	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/17/23 14:50	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/17/23 14:50	1
Trichlorofluoromethane	**1.2**	**I**	5.6	0.84	ug/m3			01/17/23 14:50	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/17/23 14:50	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/17/23 14:50	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB8-20230109

Lab Sample ID: 670-12822-4

Date Collected: 01/09/23 15:45
Matrix: Air
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:19	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:19	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:19	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/17/23 15:19	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/17/23 15:19	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/17/23 15:19	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:19	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/17/23 15:19	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:19	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:19	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:19	1
2-Butanone	**0.78**	**I**	1.0	0.21	ppb v/v			01/17/23 15:19	1
2-Hexanone	**0.18**	**I**	2.0	0.18	ppb v/v			01/17/23 15:19	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:19	1
Acetone	**4.0**	**I**	5.0	0.53	ppb v/v			01/17/23 15:19	1
Benzene	0.11	U	1.0	0.11	ppb v/v			01/17/23 15:19	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:19	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/17/23 15:19	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
Carbon disulfide	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:19	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/17/23 15:19	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:19	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:19	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/17/23 15:19	1
Chloromethane	**0.42**	**I**	1.0	0.24	ppb v/v			01/17/23 15:19	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/17/23 15:19	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:19	1
Dichlorodifluoromethane	**0.40**	**I**	1.0	0.13	ppb v/v			01/17/23 15:19	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/17/23 15:19	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
Cyclohexane	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:19	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/17/23 15:19	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/17/23 15:19	1
Toluene	**0.19**	**I**	1.0	0.12	ppb v/v			01/17/23 15:19	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:19	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:19	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/17/23 15:19	1
Trichlorofluoromethane	**0.20**	**I**	1.0	0.15	ppb v/v			01/17/23 15:19	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:19	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/17/23 15:19	1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 15:19	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/17/23 15:19	1
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 15:19	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB8-20230109
Date Collected: 01/09/23 15:45
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Lab Sample ID: 670-12822-4
Matrix: Air

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/17/23 15:19	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/17/23 15:19	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/17/23 15:19	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/17/23 15:19	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/17/23 15:19	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/17/23 15:19	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/17/23 15:19	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 15:19	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 15:19	1
2-Butanone	**2.3**	**I**	2.9	0.62	ug/m3			01/17/23 15:19	1
2-Hexanone	**0.75**	**I**	8.2	0.74	ug/m3			01/17/23 15:19	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/17/23 15:19	1
Acetone	**9.4**	**I**	12	1.3	ug/m3			01/17/23 15:19	1
Benzene	0.35	U	3.2	0.35	ug/m3			01/17/23 15:19	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/17/23 15:19	1
Bromoform	1.8	U	10	1.8	ug/m3			01/17/23 15:19	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/17/23 15:19	1
Carbon disulfide	0.40	U	3.1	0.40	ug/m3			01/17/23 15:19	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/17/23 15:19	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/17/23 15:19	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/17/23 15:19	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/17/23 15:19	1
Chloromethane	**0.86**	**I**	2.1	0.50	ug/m3			01/17/23 15:19	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 15:19	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/17/23 15:19	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/17/23 15:19	1
Dichlorodifluoromethane	**2.0**	**I**	4.9	0.64	ug/m3			01/17/23 15:19	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/17/23 15:19	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/17/23 15:19	1
Cyclohexane	0.69	U	3.4	0.69	ug/m3			01/17/23 15:19	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/17/23 15:19	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/17/23 15:19	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/17/23 15:19	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/17/23 15:19	1
Toluene	**0.72**	**I**	3.8	0.45	ug/m3			01/17/23 15:19	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 15:19	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/17/23 15:19	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/17/23 15:19	1
Trichlorofluoromethane	**1.1**	**I**	5.6	0.84	ug/m3			01/17/23 15:19	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/17/23 15:19	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/17/23 15:19	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB9-20230109

Lab Sample ID: 670-12822-5

Date Collected: 01/09/23 15:40
Matrix: Air
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:48	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/17/23 15:48	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/17/23 15:48	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/17/23 15:48	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:48	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/17/23 15:48	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:48	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:48	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:48	1
2-Butanone	**0.61**	**I**	1.0	0.21	ppb v/v			01/17/23 15:48	1
2-Hexanone	**0.22**	**I**	2.0	0.18	ppb v/v			01/17/23 15:48	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:48	1
Acetone	**4.0**	**I**	5.0	0.53	ppb v/v			01/17/23 15:48	1
Benzene	0.11	U	1.0	0.11	ppb v/v			01/17/23 15:48	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/17/23 15:48	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
Carbon disulfide	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:48	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/17/23 15:48	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:48	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/17/23 15:48	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/17/23 15:48	1
Chloromethane	**0.40**	**I**	1.0	0.24	ppb v/v			01/17/23 15:48	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/17/23 15:48	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/17/23 15:48	1
Dichlorodifluoromethane	**0.53**	**I**	1.0	0.13	ppb v/v			01/17/23 15:48	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/17/23 15:48	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
Cyclohexane	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/17/23 15:48	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/17/23 15:48	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/17/23 15:48	1
Toluene	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/17/23 15:48	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/17/23 15:48	1
Trichlorofluoromethane	**0.22**	**I**	1.0	0.15	ppb v/v			01/17/23 15:48	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/17/23 15:48	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/17/23 15:48	1

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 15:48	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/17/23 15:48	1
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/17/23 15:48	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB9-20230109
Date Collected: 01/09/23 15:40
Date Received: 01/11/23 09:36
Sample Container: Summa Canister 6L

Lab Sample ID: 670-12822-5
Matrix: Air

Method: EPA TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/17/23 15:48	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/17/23 15:48	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/17/23 15:48	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/17/23 15:48	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/17/23 15:48	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/17/23 15:48	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/17/23 15:48	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 15:48	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/17/23 15:48	1
2-Butanone	**1.8**	**I**	2.9	0.62	ug/m3			01/17/23 15:48	1
2-Hexanone	**0.89**	**I**	8.2	0.74	ug/m3			01/17/23 15:48	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/17/23 15:48	1
Acetone	**9.4**	**I**	12	1.3	ug/m3			01/17/23 15:48	1
Benzene	0.35	U	3.2	0.35	ug/m3			01/17/23 15:48	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/17/23 15:48	1
Bromoform	1.8	U	10	1.8	ug/m3			01/17/23 15:48	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/17/23 15:48	1
Carbon disulfide	0.40	U	3.1	0.40	ug/m3			01/17/23 15:48	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/17/23 15:48	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/17/23 15:48	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/17/23 15:48	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/17/23 15:48	1
Chloromethane	**0.82**	**I**	2.1	0.50	ug/m3			01/17/23 15:48	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 15:48	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/17/23 15:48	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/17/23 15:48	1
Dichlorodifluoromethane	**2.6**	**I**	4.9	0.64	ug/m3			01/17/23 15:48	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/17/23 15:48	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/17/23 15:48	1
Cyclohexane	0.69	U	3.4	0.69	ug/m3			01/17/23 15:48	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/17/23 15:48	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/17/23 15:48	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/17/23 15:48	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/17/23 15:48	1
Toluene	0.45	U	3.8	0.45	ug/m3			01/17/23 15:48	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/17/23 15:48	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/17/23 15:48	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/17/23 15:48	1
Trichlorofluoromethane	**1.2**	**I**	5.6	0.84	ug/m3			01/17/23 15:48	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/17/23 15:48	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/17/23 15:48	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 410-335919/8
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
1,1,2,2-Tetrachloroethane	0.15	U	1.0	0.15	ppb v/v			01/16/23 21:30	1
1,1,2-Trichloroethane	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
1,1-Dichloroethane	0.089	U	1.0	0.089	ppb v/v			01/16/23 21:30	1
1,1-Dichloroethene	0.14	U	1.0	0.14	ppb v/v			01/16/23 21:30	1
1,2,4-Trichlorobenzene	0.50	U	2.0	0.50	ppb v/v			01/16/23 21:30	1
1,2-Dibromoethane	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
1,2-Dichlorobenzene	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
1,2-Dichloroethane	0.080	U	1.0	0.080	ppb v/v			01/16/23 21:30	1
1,2-Dichloropropane	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
1,3-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/16/23 21:30	1
1,4-Dichlorobenzene	0.30	U	1.0	0.30	ppb v/v			01/16/23 21:30	1
2-Butanone	0.21	U	1.0	0.21	ppb v/v			01/16/23 21:30	1
2-Hexanone	0.18	U	2.0	0.18	ppb v/v			01/16/23 21:30	1
4-Methyl-2-pentanone	0.15	U	1.0	0.15	ppb v/v			01/16/23 21:30	1
Acetone	0.53	U	5.0	0.53	ppb v/v			01/16/23 21:30	1
Benzene	0.11	U	1.0	0.11	ppb v/v			01/16/23 21:30	1
Bromodichloromethane	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
Bromoform	0.17	U	1.0	0.17	ppb v/v			01/16/23 21:30	1
Bromomethane	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
Carbon disulfide	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
Carbon tetrachloride	0.14	U	1.0	0.14	ppb v/v			01/16/23 21:30	1
Chlorobenzene	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
Chloroethane	0.30	U	1.0	0.30	ppb v/v			01/16/23 21:30	1
Chloroform	0.092	U	1.0	0.092	ppb v/v			01/16/23 21:30	1
Chloromethane	0.24	U	1.0	0.24	ppb v/v			01/16/23 21:30	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
cis-1,3-Dichloropropene	0.10	U	1.0	0.10	ppb v/v			01/16/23 21:30	1
Dibromochloromethane	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
Dichlorodifluoromethane	0.13	U	1.0	0.13	ppb v/v			01/16/23 21:30	1
Ethylbenzene	0.19	U	1.0	0.19	ppb v/v			01/16/23 21:30	1
Freon 113	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
Cyclohexane	0.449	I	1.0	0.20	ppb v/v			01/16/23 21:30	1
Methyl t-butyl ether	0.15	U	1.0	0.15	ppb v/v			01/16/23 21:30	1
Methylene Chloride	0.25	U	2.0	0.25	ppb v/v			01/16/23 21:30	1
Styrene	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
Tetrachloroethene	0.25	U	2.0	0.25	ppb v/v			01/16/23 21:30	1
Toluene	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
trans-1,2-Dichloroethene	0.20	U	1.0	0.20	ppb v/v			01/16/23 21:30	1
trans-1,3-Dichloropropene	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
Trichloroethene	0.18	U	1.0	0.18	ppb v/v			01/16/23 21:30	1
Trichlorofluoromethane	0.15	U	1.0	0.15	ppb v/v			01/16/23 21:30	1
Vinyl chloride	0.12	U	1.0	0.12	ppb v/v			01/16/23 21:30	1
Xylenes, Total	0.19	U	2.0	0.19	ppb v/v			01/16/23 21:30	1

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/16/23 21:30	1
1,1,2,2-Tetrachloroethane	1.0	U	6.9	1.0	ug/m3			01/16/23 21:30	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 410-335919/8
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.65	U	5.5	0.65	ug/m3			01/16/23 21:30	1
1,1-Dichloroethane	0.36	U	4.0	0.36	ug/m3			01/16/23 21:30	1
1,1-Dichloroethene	0.56	U	4.0	0.56	ug/m3			01/16/23 21:30	1
1,2,4-Trichlorobenzene	3.7	U	15	3.7	ug/m3			01/16/23 21:30	1
1,2-Dibromoethane	1.0	U	7.7	1.0	ug/m3			01/16/23 21:30	1
1,2-Dichlorobenzene	1.2	U	6.0	1.2	ug/m3			01/16/23 21:30	1
1,2-Dichloroethane	0.32	U	4.0	0.32	ug/m3			01/16/23 21:30	1
1,2-Dichloropropane	0.60	U	4.6	0.60	ug/m3			01/16/23 21:30	1
1,3-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/16/23 21:30	1
1,4-Dichlorobenzene	1.8	U	6.0	1.8	ug/m3			01/16/23 21:30	1
2-Butanone	0.62	U	2.9	0.62	ug/m3			01/16/23 21:30	1
2-Hexanone	0.74	U	8.2	0.74	ug/m3			01/16/23 21:30	1
4-Methyl-2-pentanone	0.61	U	4.1	0.61	ug/m3			01/16/23 21:30	1
Acetone	1.3	U	12	1.3	ug/m3			01/16/23 21:30	1
Benzene	0.35	U	3.2	0.35	ug/m3			01/16/23 21:30	1
Bromodichloromethane	0.80	U	6.7	0.80	ug/m3			01/16/23 21:30	1
Bromoform	1.8	U	10	1.8	ug/m3			01/16/23 21:30	1
Bromomethane	0.78	U	3.9	0.78	ug/m3			01/16/23 21:30	1
Carbon disulfide	0.40	U	3.1	0.40	ug/m3			01/16/23 21:30	1
Carbon tetrachloride	0.88	U	6.3	0.88	ug/m3			01/16/23 21:30	1
Chlorobenzene	0.60	U	4.6	0.60	ug/m3			01/16/23 21:30	1
Chloroethane	0.79	U	2.6	0.79	ug/m3			01/16/23 21:30	1
Chloroform	0.45	U	4.9	0.45	ug/m3			01/16/23 21:30	1
Chloromethane	0.50	U	2.1	0.50	ug/m3			01/16/23 21:30	1
cis-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/16/23 21:30	1
cis-1,3-Dichloropropene	0.45	U	4.5	0.45	ug/m3			01/16/23 21:30	1
Dibromochloromethane	1.1	U	8.5	1.1	ug/m3			01/16/23 21:30	1
Dichlorodifluoromethane	0.64	U	4.9	0.64	ug/m3			01/16/23 21:30	1
Ethylbenzene	0.83	U	4.3	0.83	ug/m3			01/16/23 21:30	1
Freon 113	1.5	U	7.7	1.5	ug/m3			01/16/23 21:30	1
Cyclohexane	1.55	I	3.4	0.69	ug/m3			01/16/23 21:30	1
Methyl t-butyl ether	0.54	U	3.6	0.54	ug/m3			01/16/23 21:30	1
Methylene Chloride	0.87	U	6.9	0.87	ug/m3			01/16/23 21:30	1
Styrene	0.85	U	4.3	0.85	ug/m3			01/16/23 21:30	1
Tetrachloroethene	1.7	U	14	1.7	ug/m3			01/16/23 21:30	1
Toluene	0.45	U	3.8	0.45	ug/m3			01/16/23 21:30	1
trans-1,2-Dichloroethene	0.79	U	4.0	0.79	ug/m3			01/16/23 21:30	1
trans-1,3-Dichloropropene	0.54	U	4.5	0.54	ug/m3			01/16/23 21:30	1
Trichloroethene	0.97	U	5.4	0.97	ug/m3			01/16/23 21:30	1
Trichlorofluoromethane	0.84	U	5.6	0.84	ug/m3			01/16/23 21:30	1
Vinyl chloride	0.31	U	2.6	0.31	ug/m3			01/16/23 21:30	1
Xylenes, Total	0.83	U	8.7	0.83	ug/m3			01/16/23 21:30	1

Lab Sample ID: LCS 410-335919/5
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1-Trichloroethane			10.0	10.4		ppb v/v		104	70 - 130		

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 410-335919/5
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	10.0	9.33		ppb v/v		93	68 - 138
1,1,2-Trichloroethane	10.0	9.05		ppb v/v		90	76 - 127
1,1-Dichloroethane	10.0	11.2		ppb v/v		112	70 - 130
1,1-Dichloroethene	10.0	11.7		ppb v/v		117	70 - 131
1,2,4-Trichlorobenzene	10.0	8.50		ppb v/v		85	31 - 155
1,2-Dibromoethane	10.0	10.1		ppb v/v		101	70 - 130
1,2-Dichlorobenzene	10.0	9.51		ppb v/v		95	61 - 139
1,2-Dichloroethane	10.0	10.6		ppb v/v		106	70 - 142
1,2-Dichloropropane	10.0	9.81		ppb v/v		98	70 - 130
1,3-Dichlorobenzene	10.0	9.60		ppb v/v		96	64 - 140
1,4-Dichlorobenzene	10.0	9.48		ppb v/v		95	64 - 137
2-Butanone	10.0	10.7		ppb v/v		107	70 - 130
2-Hexanone	10.0	8.77		ppb v/v		88	63 - 144
4-Methyl-2-pentanone	10.0	9.19		ppb v/v		92	68 - 133
Acetone	10.0	10.1		ppb v/v		101	70 - 137
Benzene	10.0	9.89		ppb v/v		99	70 - 130
Bromodichloromethane	10.0	9.54		ppb v/v		95	75 - 134
Bromoform	10.0	10.0		ppb v/v		100	60 - 139
Bromomethane	10.0	12.3		ppb v/v		123	70 - 134
Carbon disulfide	10.0	11.4		ppb v/v		114	70 - 130
Carbon tetrachloride	10.0	10.5		ppb v/v		105	70 - 130
Chlorobenzene	10.0	9.58		ppb v/v		96	76 - 117
Chloroethane	10.0	11.9		ppb v/v		119	70 - 131
Chloroform	10.0	10.4		ppb v/v		104	70 - 130
Chloromethane	10.0	10.9		ppb v/v		109	70 - 138
cis-1,2-Dichloroethene	10.0	11.0		ppb v/v		110	70 - 130
cis-1,3-Dichloropropene	10.0	10.0		ppb v/v		100	70 - 130
Dibromochloromethane	10.0	10.4		ppb v/v		104	74 - 131
Dichlorodifluoromethane	10.0	10.8		ppb v/v		108	70 - 131
Ethylbenzene	10.0	9.25		ppb v/v		93	70 - 130
Freon 113	10.0	10.3		ppb v/v		103	70 - 130
m&p-Xylene	10.0	9.06		ppb v/v		91	78 - 119
Cyclohexane	10.0	9.81		ppb v/v		98	70 - 130
Methyl t-butyl ether	10.0	10.9		ppb v/v		109	70 - 130
Methylene Chloride	10.0	10.6		ppb v/v		106	70 - 139
o-Xylene	10.0	9.26		ppb v/v		93	70 - 130
Styrene	10.0	10.0		ppb v/v		100	70 - 133
Tetrachloroethene	10.0	10.5		ppb v/v		105	70 - 130
Toluene	10.0	9.27		ppb v/v		93	70 - 130
trans-1,2-Dichloroethene	10.0	11.7		ppb v/v		117	70 - 130
trans-1,3-Dichloropropene	10.0	10.0		ppb v/v		100	70 - 130
Trichloroethene	10.0	10.2		ppb v/v		102	70 - 130
Trichlorofluoromethane	10.0	11.0		ppb v/v		110	70 - 130
Vinyl chloride	10.0	12.6		ppb v/v		126	70 - 135
Xylenes, Total	20.0	18.3		ppb v/v		92	70 - 130

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	55	56.6		ug/m3		104	70 - 130
1,1,2,2-Tetrachloroethane	69	64.1		ug/m3		93	68 - 138

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCS 410-335919/5
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2-Trichloroethane	55	49.4		ug/m3		90	76 - 127
1,1-Dichloroethane	40	45.4		ug/m3		112	70 - 130
1,1-Dichloroethene	40	46.3		ug/m3		117	70 - 131
1,2,4-Trichlorobenzene	74	63.1		ug/m3		85	31 - 155
1,2-Dibromoethane	77	77.3		ug/m3		101	70 - 130
1,2-Dichlorobenzene	60	57.2		ug/m3		95	61 - 139
1,2-Dichloroethane	40	42.9		ug/m3		106	70 - 142
1,2-Dichloropropane	46	45.3		ug/m3		98	70 - 130
1,3-Dichlorobenzene	60	57.7		ug/m3		96	64 - 140
1,4-Dichlorobenzene	60	57.0		ug/m3		95	64 - 137
2-Butanone	29	31.6		ug/m3		107	70 - 130
2-Hexanone	41	35.9		ug/m3		88	63 - 144
4-Methyl-2-pentanone	41	37.7		ug/m3		92	68 - 133
Acetone	24	24.0		ug/m3		101	70 - 137
Benzene	32	31.6		ug/m3		99	70 - 130
Bromodichloromethane	67	63.9		ug/m3		95	75 - 134
Bromoform	100	103		ug/m3		100	60 - 139
Bromomethane	39	47.7		ug/m3		123	70 - 134
Carbon disulfide	31	35.5		ug/m3		114	70 - 130
Carbon tetrachloride	63	65.8		ug/m3		105	70 - 130
Chlorobenzene	46	44.1		ug/m3		96	76 - 117
Chloroethane	26	31.5		ug/m3		119	70 - 131
Chloroform	49	50.9		ug/m3		104	70 - 130
Chloromethane	21	22.6		ug/m3		109	70 - 138
cis-1,2-Dichloroethene	40	43.6		ug/m3		110	70 - 130
cis-1,3-Dichloropropene	45	45.6		ug/m3		100	70 - 130
Dibromochloromethane	85	88.9		ug/m3		104	74 - 131
Dichlorodifluoromethane	49	53.3		ug/m3		108	70 - 131
Ethylbenzene	43	40.2		ug/m3		93	70 - 130
Freon 113	77	79.2		ug/m3		103	70 - 130
m&p-Xylene	43	39.4		ug/m3		91	78 - 119
Cyclohexane	34	33.8		ug/m3		98	70 - 130
Methyl t-butyl ether	36	39.2		ug/m3		109	70 - 130
Methylene Chloride	35	37.0		ug/m3		106	70 - 139
o-Xylene	43	40.2		ug/m3		93	70 - 130
Styrene	43	42.7		ug/m3		100	70 - 133
Tetrachloroethene	68	71.3		ug/m3		105	70 - 130
Toluene	38	34.9		ug/m3		93	70 - 130
trans-1,2-Dichloroethene	40	46.4		ug/m3		117	70 - 130
trans-1,3-Dichloropropene	45	45.5		ug/m3		100	70 - 130
Trichloroethene	54	55.0		ug/m3		102	70 - 130
Trichlorofluoromethane	56	61.7		ug/m3		110	70 - 130
Vinyl chloride	26	32.2		ug/m3		126	70 - 135
Xylenes, Total	87	79.6		ug/m3		92	70 - 130

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: LCSD 410-335919/6
Matrix: Air
Analysis Batch: 335919

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			10.0	10.3		ppb v/v		103	70 - 130	0	25
1,1,2,2-Tetrachloroethane			10.0	9.08		ppb v/v		91	68 - 138	3	25
1,1,2-Trichloroethane			10.0	9.04		ppb v/v		90	76 - 127	0	25
1,1-Dichloroethane			10.0	11.0		ppb v/v		110	70 - 130	2	25
1,1-Dichloroethene			10.0	11.6		ppb v/v		116	70 - 131	1	25
1,2,4-Trichlorobenzene			10.0	8.99		ppb v/v		90	31 - 155	6	25
1,2-Dibromoethane			10.0	9.98		ppb v/v		100	70 - 130	1	25
1,2-Dichlorobenzene			10.0	9.54		ppb v/v		95	61 - 139	0	25
1,2-Dichloroethane			10.0	10.6		ppb v/v		106	70 - 142	0	25
1,2-Dichloropropane			10.0	9.88		ppb v/v		99	70 - 130	1	25
1,3-Dichlorobenzene			10.0	9.52		ppb v/v		95	64 - 140	1	25
1,4-Dichlorobenzene			10.0	9.35		ppb v/v		94	64 - 137	1	25
2-Butanone			10.0	10.5		ppb v/v		105	70 - 130	2	25
2-Hexanone			10.0	8.66		ppb v/v		87	63 - 144	1	25
4-Methyl-2-pentanone			10.0	9.32		ppb v/v		93	68 - 133	1	25
Acetone			10.0	10.3		ppb v/v		103	70 - 137	1	25
Benzene			10.0	9.88		ppb v/v		99	70 - 130	0	25
Bromodichloromethane			10.0	9.70		ppb v/v		97	75 - 134	2	25
Bromoform			10.0	9.93		ppb v/v		99	60 - 139	1	25
Bromomethane			10.0	12.1		ppb v/v		121	70 - 134	2	25
Carbon disulfide			10.0	11.3		ppb v/v		113	70 - 130	0	25
Carbon tetrachloride			10.0	10.5		ppb v/v		105	70 - 130	0	25
Chlorobenzene			10.0	9.47		ppb v/v		95	76 - 117	1	25
Chloroethane			10.0	12.0		ppb v/v		120	70 - 131	1	25
Chloroform			10.0	10.4		ppb v/v		104	70 - 130	0	25
Chloromethane			10.0	10.5		ppb v/v		105	70 - 138	4	25
cis-1,2-Dichloroethene			10.0	11.0		ppb v/v		110	70 - 130	0	25
cis-1,3-Dichloropropene			10.0	9.93		ppb v/v		99	70 - 130	1	25
Dibromochloromethane			10.0	10.1		ppb v/v		101	74 - 131	3	25
Dichlorodifluoromethane			10.0	10.7		ppb v/v		107	70 - 131	1	25
Ethylbenzene			10.0	9.14		ppb v/v		91	70 - 130	1	25
Freon 113			10.0	10.1		ppb v/v		101	70 - 130	2	25
m&p-Xylene			10.0	9.00		ppb v/v		90	78 - 119	1	25
Cyclohexane			10.0	9.71		ppb v/v		97	70 - 130	1	25
Methyl t-butyl ether			10.0	10.6		ppb v/v		106	70 - 130	2	25
Methylene Chloride			10.0	10.5		ppb v/v		105	70 - 139	1	25
o-Xylene			10.0	9.10		ppb v/v		91	70 - 130	2	25
Styrene			10.0	9.91		ppb v/v		99	70 - 133	1	25
Tetrachloroethene			10.0	10.4		ppb v/v		104	70 - 130	1	25
Toluene			10.0	9.15		ppb v/v		92	70 - 130	1	25
trans-1,2-Dichloroethene			10.0	11.3		ppb v/v		113	70 - 130	3	25
trans-1,3-Dichloropropene			10.0	10.0		ppb v/v		100	70 - 130	0	25
Trichloroethene			10.0	10.3		ppb v/v		103	70 - 130	1	25
Trichlorofluoromethane			10.0	10.8		ppb v/v		108	70 - 130	2	25
Vinyl chloride			10.0	12.3		ppb v/v		123	70 - 135	2	25
Xylenes, Total			20.0	18.1		ppb v/v		91	70 - 130	1	25

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			55	56.4		ug/m3		103	70 - 130	0	25
1,1,2,2-Tetrachloroethane			69	62.4		ug/m3		91	68 - 138	3	25
1,1,2-Trichloroethane			55	49.3		ug/m3		90	76 - 127	0	25
1,1-Dichloroethane			40	44.5		ug/m3		110	70 - 130	2	25
1,1-Dichloroethene			40	45.8		ug/m3		116	70 - 131	1	25
1,2,4-Trichlorobenzene			74	66.7		ug/m3		90	31 - 155	6	25
1,2-Dibromoethane			77	76.7		ug/m3		100	70 - 130	1	25
1,2-Dichlorobenzene			60	57.3		ug/m3		95	61 - 139	0	25
1,2-Dichloroethane			40	43.1		ug/m3		106	70 - 142	0	25
1,2-Dichloropropane			46	45.7		ug/m3		99	70 - 130	1	25
1,3-Dichlorobenzene			60	57.3		ug/m3		95	64 - 140	1	25
1,4-Dichlorobenzene			60	56.2		ug/m3		94	64 - 137	1	25
2-Butanone			29	31.1		ug/m3		105	70 - 130	2	25
2-Hexanone			41	35.5		ug/m3		87	63 - 144	1	25
4-Methyl-2-pentanone			41	38.2		ug/m3		93	68 - 133	1	25
Acetone			24	24.4		ug/m3		103	70 - 137	1	25
Benzene			32	31.6		ug/m3		99	70 - 130	0	25
Bromodichloromethane			67	65.0		ug/m3		97	75 - 134	2	25
Bromoform			100	103		ug/m3		99	60 - 139	1	25
Bromomethane			39	46.9		ug/m3		121	70 - 134	2	25
Carbon disulfide			31	35.3		ug/m3		113	70 - 130	0	25
Carbon tetrachloride			63	66.0		ug/m3		105	70 - 130	0	25
Chlorobenzene			46	43.6		ug/m3		95	76 - 117	1	25
Chloroethane			26	31.7		ug/m3		120	70 - 131	1	25
Chloroform			49	51.0		ug/m3		104	70 - 130	0	25
Chloromethane			21	21.7		ug/m3		105	70 - 138	4	25
cis-1,2-Dichloroethene			40	43.4		ug/m3		110	70 - 130	0	25
cis-1,3-Dichloropropene			45	45.1		ug/m3		99	70 - 130	1	25
Dibromochloromethane			85	86.4		ug/m3		101	74 - 131	3	25
Dichlorodifluoromethane			49	52.7		ug/m3		107	70 - 131	1	25
Ethylbenzene			43	39.7		ug/m3		91	70 - 130	1	25
Freon 113			77	77.7		ug/m3		101	70 - 130	2	25
m&p-Xylene			43	39.1		ug/m3		90	78 - 119	1	25
Cyclohexane			34	33.4		ug/m3		97	70 - 130	1	25
Methyl t-butyl ether			36	38.4		ug/m3		106	70 - 130	2	25
Methylene Chloride			35	36.4		ug/m3		105	70 - 139	1	25
o-Xylene			43	39.5		ug/m3		91	70 - 130	2	25
Styrene			43	42.2		ug/m3		99	70 - 133	1	25
Tetrachloroethene			68	70.8		ug/m3		104	70 - 130	1	25
Toluene			38	34.5		ug/m3		92	70 - 130	1	25
trans-1,2-Dichloroethene			40	45.0		ug/m3		113	70 - 130	3	25
trans-1,3-Dichloropropene			45	45.5		ug/m3		100	70 - 130	0	25
Trichloroethene			54	55.3		ug/m3		103	70 - 130	1	25
Trichlorofluoromethane			56	60.6		ug/m3		108	70 - 130	2	25
Vinyl chloride			26	31.5		ug/m3		123	70 - 135	2	25
Xylenes, Total			87	78.6		ug/m3		91	70 - 130	1	25

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Air - GC/MS VOA

Analysis Batch: 335919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-12822-1	POL-AMB7-20230109	Total/NA	Air	TO-15	
670-12822-2	POL-AMB6-20230109	Total/NA	Air	TO-15	
670-12822-3	POL-AMB5-20230109	Total/NA	Air	TO-15	
670-12822-4	POL-AMB8-20230109	Total/NA	Air	TO-15	
670-12822-5	POL-AMB9-20230109	Total/NA	Air	TO-15	
MB 410-335919/8	Method Blank	Total/NA	Air	TO-15	
LCS 410-335919/5	Lab Control Sample	Total/NA	Air	TO-15	
LCSD 410-335919/6	Lab Control Sample Dup	Total/NA	Air	TO-15	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Client Sample ID: POL-AMB7-20230109
Lab Sample ID: 670-12822-1
Date Collected: 01/09/23 13:20
Matrix: Air
Date Received: 01/11/23 09:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	TO-15		1	335919	URR2	ELLE	01/17/23 13:52

Client Sample ID: POL-AMB6-20230109
Lab Sample ID: 670-12822-2
Date Collected: 01/09/23 15:30
Matrix: Air
Date Received: 01/11/23 09:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	TO-15		1	335919	URR2	ELLE	01/17/23 14:21

Client Sample ID: POL-AMB5-20230109
Lab Sample ID: 670-12822-3
Date Collected: 01/09/23 15:35
Matrix: Air
Date Received: 01/11/23 09:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	TO-15		1	335919	URR2	ELLE	01/17/23 14:50

Client Sample ID: POL-AMB8-20230109
Lab Sample ID: 670-12822-4
Date Collected: 01/09/23 15:45
Matrix: Air
Date Received: 01/11/23 09:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	TO-15		1	335919	URR2	ELLE	01/17/23 15:19

Client Sample ID: POL-AMB9-20230109
Lab Sample ID: 670-12822-5
Date Collected: 01/09/23 15:40
Matrix: Air
Date Received: 01/11/23 09:36

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	TO-15		1	335919	URR2	ELLE	01/17/23 15:48

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	0001.01	02-13-23
A2LA	ISO/IEC 17025	0001.01	11-30-24
Alaska	State	PA00009	03-08-23
Alaska (UST)	State	17-027	02-23-23
Arizona	State	AZ0780	03-11-23
Arkansas DEQ	State	88-00660	08-09-23
California	State	2792	02-06-23
Colorado	State	PA00009	06-30-23
Connecticut	State	PH-0746	04-17-23
DE Haz. Subst. Cleanup Act (HSCA)	State	019-006 (PA cert)	01-30-23
Delaware (DW)	State	N/A	01-31-23
Florida	NELAP	E87997	04-17-23
Georgia (DW)	State	C048	01-31-23
Hawaii	State	N/A	01-31-23
Illinois	NELAP	200027	01-31-23
Iowa	State	361	03-12-23
Kansas	NELAP	E-10151	04-17-23
Kentucky (DW)	State	KY90088	12-31-23
Kentucky (UST)	State	0001.01	11-30-24
Kentucky (WW)	State	KY90088	04-17-23
Louisiana (All)	NELAP	02055	04-17-23
Maine	State	2019012	03-12-23
Maryland	State	100	05-11-23
Massachusetts	State	M-PA009	04-24-23
Michigan	State	9930	01-31-24
Minnesota	NELAP	042-999-487	12-31-23
Mississippi	State	023	01-31-24
Missouri	State	450	01-31-25
Montana (DW)	State	0098	01-01-24
Montana (UST)	State	<cert No.>	02-01-23
Nebraska	State	NE-OS-32-17	01-31-23
New Hampshire	NELAP	2730	01-25-23
New Jersey	NELAP	PA011	01-17-23
New York	NELAP	10670	02-20-23
North Carolina (DW)	State	42705	07-31-23
North Carolina (WW/SW)	State	521	04-23-23
North Dakota	State	R-205	01-22-23
Oklahoma	NELAP	9804	04-24-23
Oregon	NELAP	PA200001	04-12-23
PALA	Canada	1978	09-16-24
Pennsylvania	NELAP	36-00037	01-30-23
Rhode Island	State	LAO00338	04-17-23
South Carolina	State	89002	01-29-23
Tennessee	State	02838	01-31-23
Texas	NELAP	T104704194-23-46	05-03-23
USDA	US Federal Programs	525-22-298-19481	10-25-25
Vermont	State	VT - 36037	10-28-23
Virginia	NELAP	460182	01-19-23
Washington	State	C457	04-11-23
West Virginia (DW)	State	9906 C	12-31-23

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	04-11-23
Wyoming	State	8TMS-L	01-30-23
Wyoming (UST)	A2LA	0001.01	11-30-24

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	ELLE

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job ID: 670-12822-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
670-12822-1	POL-AMB7-20230109	Air	01/09/23 13:20	01/11/23 09:36	Air Canister (6-Liter) #1414
670-12822-2	POL-AMB6-20230109	Air	01/09/23 15:30	01/11/23 09:36	Air Canister (6-Liter) #1377
670-12822-3	POL-AMB5-20230109	Air	01/09/23 15:35	01/11/23 09:36	Air Canister (6-Liter) #1270
670-12822-4	POL-AMB8-20230109	Air	01/09/23 15:45	01/11/23 09:36	Air Canister (6-Liter) #1517
670-12822-5	POL-AMB9-20230109	Air	01/09/23 15:40	01/11/23 09:36	Air Canister (6-Liter) #1218

ter Field Test Data/Chain of Custody

eurofins | Lancaster Laboratories Environmental

670-12822 Chain of Custody

For Eurofins Lancaster Laboratories Environmental use only

Sample # _____ Bottle Order (SCR) # 3990

Client Information

Client: Tetra Tech

Account #:

Project Name/#: 112g09020 : POL

Project Manager: Mark Jonnet

P.O. #:

Sampler: Robert Siegel

Quote #:

Name of state where samples were collected: FL

Turnaround Time Requested (TAT) (circle one)

Standard Rush (specify) _____

Data Package Required? Yes No

EDD Required? Yes No

	Temperature (F)		Pressure ("Hg)	
	Start	Stop	Start	Stop
Ambient				
Maximum				
Minimum				

Analyses Requested

Sample Identification	~~Start~~ Date/Time (24-hour clock)	~~Stop~~ Date/Time (24-hour clock)	Canister Pressure in Field ("Hg) (Start)	Canister Pressure in Field ("Hg) (Stop)	Interior Temp. (F) (Start)	Interior Temp. (F) (Stop)	Flow Reg. ID	Can ID	Can Size (L)	Controller Flowrate (mL/min)	EPA TO - 15	EPA 18 ☐ MTBE ☐ BTEX	EPA 25 (select range below)	Helium as tracer	O2/CO2	Library Search
POL-AMB7 - 20230109	010923	010923/0735	-30.0	-5.5	53°	77.0°	848467	1414	6	10.4	X					
POL-AMB6 - 20230109	010923	010923/0730	-29.0	-7.0	53°	77.0°	236807	1377	6	10.5	X					
POL-AMB5 - 20230109	010923 1320	010923/0725	-30.0	-1.0	53°	75.0°	710539	1270	6	10.4	X					
POL-AMB8 - 20230109	010923	010923/0745	-29.0	-8.0	53°	77.0°	930842	1517	6	10.4	X					
POL-AMB9 - 20230109	010923	010923/0740	-30.0	-11.0	53°	77.0°	848494	1218	6	10.3	X					

Instructions/QC Requirements & Comments

EPA 25 (check one) ☐ C1 - C4 ☐ C2 - C10 ☐ C1 - C10 ☐ C4 - C10 (GRO) ☐ C2 - C4

Relinquished by:	Date/Time:	Received by:	Date/Time:	Relinquished by:	Date/Time:	Received by:	Date/Time:
Canisters Shipped by: RRM 214	1/9/23 1110	Canisters Received by:	1/9/23 1810	Relinquished by: RSiegel	1/10/23 1200	Received by:	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Relinquished by:	Date/Time:	Received by:	Date/Time:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Relinquished by:	Date/Time:	Received by:	Date/Time: 1/11/23 0936

Tetra Tech, Inc. CHAIN OF CUSTODY | NUMBER No. 2300 | PAGE 1 OF 1

PROJECT NO: 112GO 9020	FACILITY: KSC - NASA POL	PROJECT MANAGER Mark Jumet	PHONE NUMBER 321 421-8622	LABORATORY NAME AND CONTACT: Eurofins Kaitlin Dylnicki
SAMPLERS (SIGNATURE) Robert Siegel TT		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER 321 591-7580	ADDRESS 2425 New Holland Pike
		~~CARRIER/WAYBILL NUMBER~~ Lab # 67000968		CITY, STATE Lancaster PA 17601

STANDARD TAT ☑ RUSH TAT ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE SS Steel / PLASTIC (P) or GLASS (G): S

PRESERVATIVE USED: none

TYPE OF ANALYSIS: AMB Barge; Tank start Vac -Hg"; Tank End Vac -Hg"; start Temp °F; End Temp °F; TO15 PF NASA KSC POL list

DATE YEAR 2023	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT) Start Time	BOTTOM DEPTH (FT) End Time	MATRIX (GW, SO, SW, SD, QC, ETC.) ASA	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	AMB Barge	Tank start Vac -Hg"	Tank End Vac -Hg"	start Temp °F	End Temp °F	TO15 PF NASA KSC POL list			COMMENTS	
1/9	1320	POL-AMB 5-20230109	5	0725	1320	A	C	1	0	-30.0	-1.0	53°	75.0°	X			1270	A027105 34
1/9	1530	POL-AMB 6-20230109	6	0730	1530	A	C	1	0	-29.0	-7.0	53°	77.0°	X			1377	7236807
1/9	1535	POL-AMB 7-20230109	7	0735	1535	A	C	1	0	-30.0	-5.5	53°	77.0°	X			1414	A028487
1/9	1545	POL-AMB 8-20230109	8	0745	1545	A	C	1	0	-29.0	-8.0	53°	77.0°	X			1577	A028487
1/9	1540	POL-AMB 9-20230109	9	0740	1540	A	C	1	0	-30.0	-11.0	53°	77.0°	X			1218	402930842
																	Can #	Reg #

1. RELINQUISHED BY R Siegel TT	DATE 1 10 23	TIME 1540	1. RECEIVED BY	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE 1/11/23	TIME 0936

COMMENTS

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-12822-1

Login Number: 12822
List Number: 1
Creator: Hartley, Tyler

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-12822-1

Login Number: 12822
List Number: 2
Creator: Foreman, Leah M

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC
List Creation: 01/12/23 09:01 AM

Question	Answer	Comment
The cooler's custody seal is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	Thermal preservation not required.
Cooler Temperature is acceptable (</=6C, not frozen).	N/A	
Cooler Temperature is recorded.	N/A	
WV: Container Temperature is acceptable (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Summa Canister Dilution Worksheet

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL Airs

Job No.: 670-12822-1

Lab Sample ID	Canister Volume (L)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Pressure Gauge ID	Date	Analyst Initals
670-12822-1	6	-5.6	0.81	4.88	9.2	1.63	9.76		2.00	2.00		01/12/23 19:09	MDQ6
670-12822-2	6	-7.0	0.77	4.60	7.8	1.53	9.18		2.00	2.00		01/12/23 19:10	MDQ6
670-12822-3	6	-3.0	0.90	5.40	11.7	1.80	10.78		2.00	2.00		01/12/23 19:10	MDQ6
670-12822-4	6	-11.2	0.63	3.75	8.3	1.56	9.39		2.50	2.50		01/12/23 19:10	MDQ6
670-12822-5	6	-7.8	0.74	4.44	7.0	1.48	8.86		2.00	2.00		01/12/23 19:11	MDQ6

Formulae:

Preadjusted Volume (L) = ((Preadjusted Pressure ("Hg) + 29.92 "Hg) * Vol L) / 29.92 "Hg
Adjusted Volume (L) = ((Adjusted Pressure (psig) + 14.7 psig)* Vol L) / 14.7 psig
Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

29.92 "Hg = Standard atmospheric pressure in inches of Mercury (“Hg)
14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-108570-1

SDG No.:

Client Sample ID: 1191 Lab Sample ID: 410-108570-1

Matrix: Air Lab File ID: 6D08X12.D

Analysis Method: TO-15 Date Collected: 12/07/2022 22:37

Sample wt/vol: 200(mL) Date Analyzed: 12/08/2022 18:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 324902 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND		1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND		1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-108570-1

SDG No.:

Client Sample ID: 1191 Lab Sample ID: 410-108570-1

Matrix: Air Lab File ID: 6D08X12.D

Analysis Method: TO-15 Date Collected: 12/07/2022 22:37

Sample wt/vol: 200(mL) Date Analyzed: 12/08/2022 18:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 324902 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND		1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-108570-1

SDG No.:

Client Sample ID: 1191 Lab Sample ID: 410-108570-1

Matrix: Air Lab File ID: 6D08X12.D

Analysis Method: TO-15 Date Collected: 12/07/2022 22:37

Sample wt/vol: 200(mL) Date Analyzed: 12/08/2022 18:08

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 324902 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221208-72810.b\6D08X12.D				
Lims ID:	410-108570-A-1				
Client ID:	1191				
Sample Type:	Client				
Inject. Date:	08-Dec-2022 18:08:24	ALS Bottle#:	0	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	1191				
Misc. Info.:	410-0072810-012				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221208-72810.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	10-Dec-2022 15:44:49	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1680				
First Level Reviewer: MLX9		Date:	09-Dec-2022 10:38:42		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 35 Chlorobromomethane (IS)	130	5.241	5.237	0.004	86	106705	10.0	
* 50 1,4-Difluorobenzene	114	6.185	6.182	0.003	93	307482	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.727	0.004	84	349081	10.0	

QC Flag Legend

Processing Flags

Reagents:

AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 10-Dec-2022 15:45:04 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\HP26379\20221208-72810.b\6D08X12.D

Injection Date: 08-Dec-2022 18:08:24 Instrument ID: HP26379

Lims ID: 410-108570-A-1 Lab Sample ID: 410-108570-1

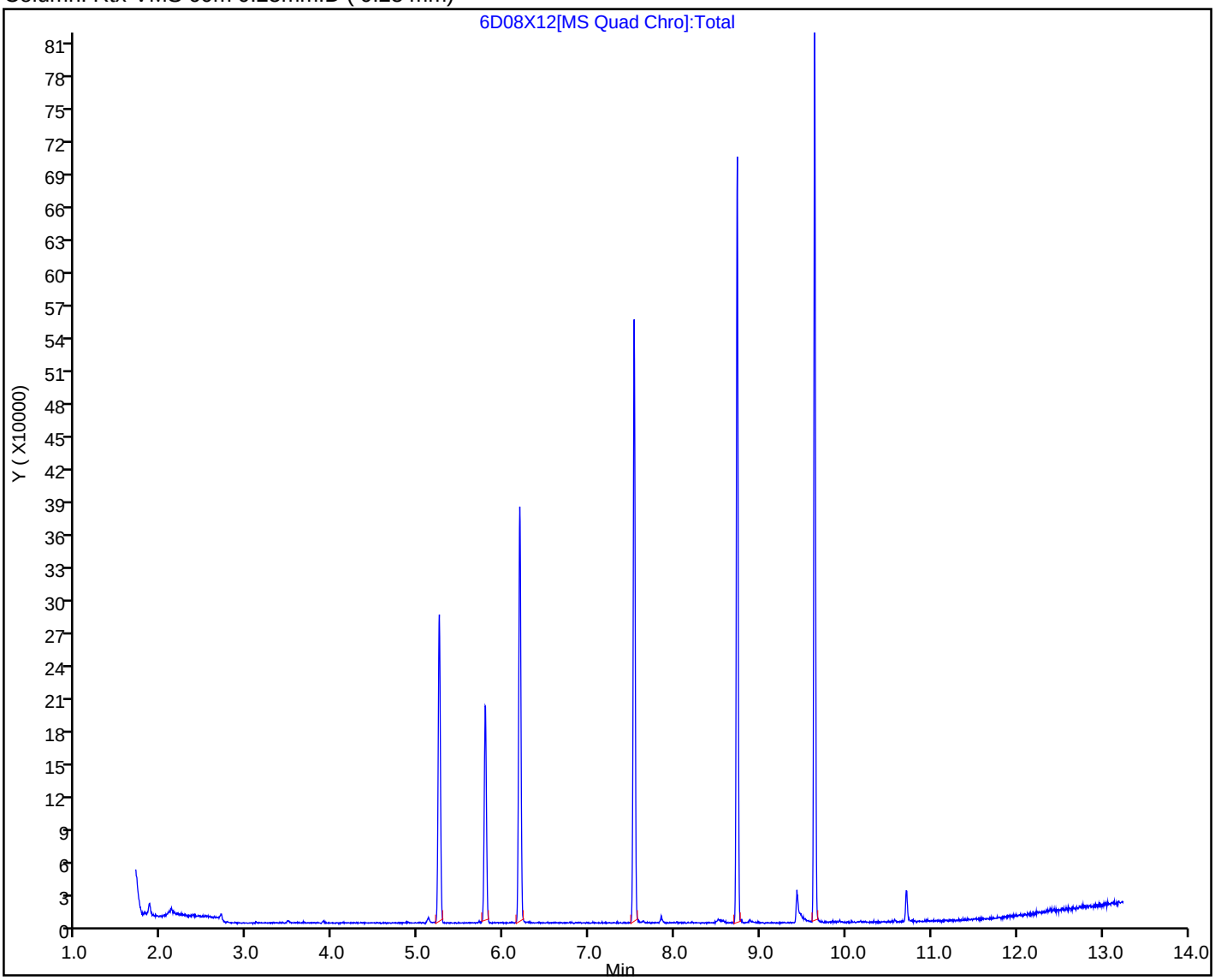
Client ID: 1191

Operator ID: rrm00219 ALS Bottle#: 0 Worklist Smp#: 12

Purge Vol: 200.000 mL Dil. Factor: 1.0000

Method: AirMS_HP26379 Limit Group: MSV - TO15

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



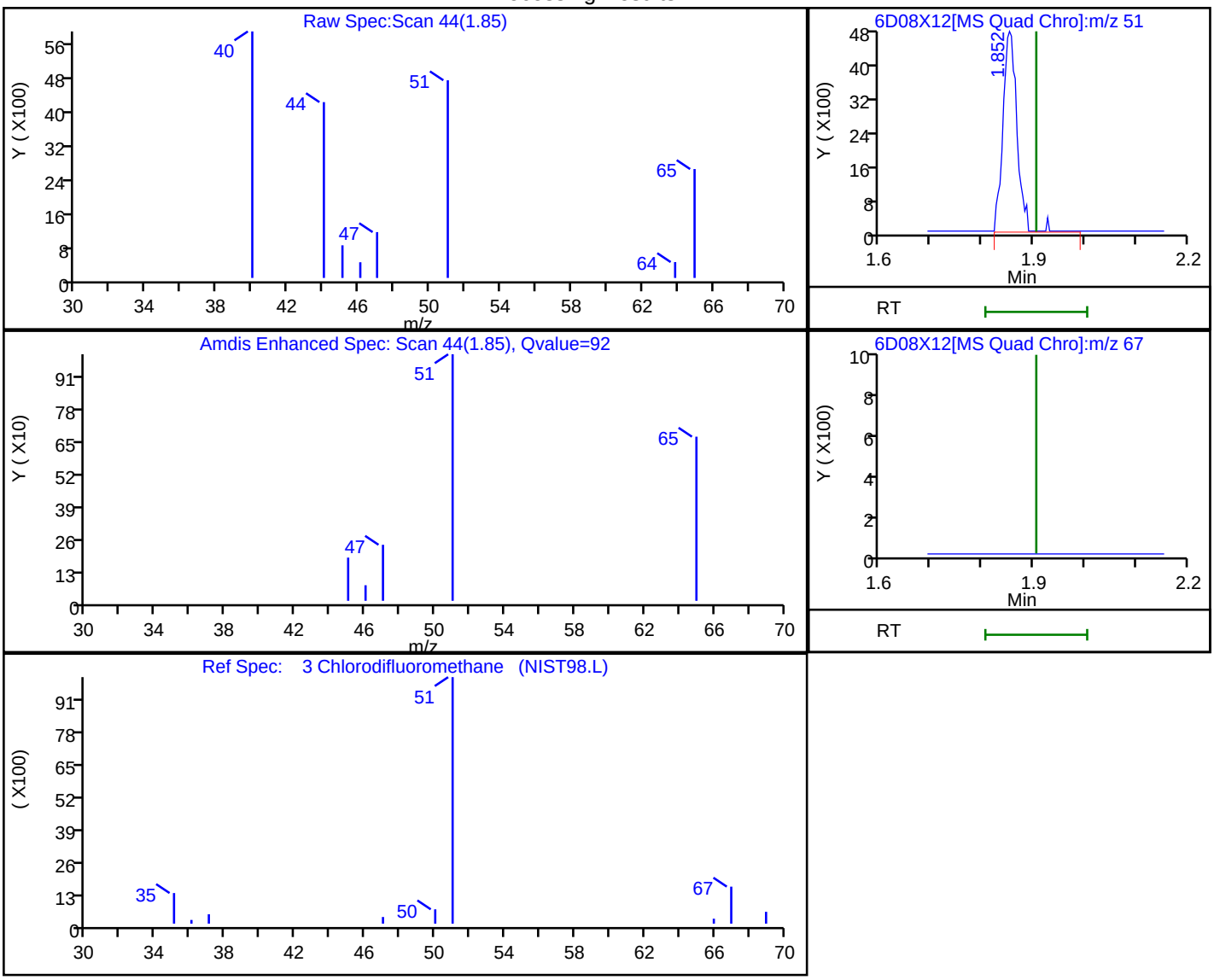
User Disabled Compound Report

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221208-72810.b\6D08X12.D				
Injection Date:	08-Dec-2022 18:08:24	Instrument ID:	HP26379		
Lims ID:	410-108570-A-1	Lab Sample ID:	410-108570-1		
Client ID:	1191				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		
Column:	Rtx-VMS 60m 0.25mmID (0.25 mm)	Detector	MS Quad		

3 Chlorodifluoromethane, CAS: 75-45-6

Processing Results



RT	Mass	Response	Amount
1.85	51.00	8899	0.566762
1.90	67.00	0	

Reviewer: UKEK, 10-Dec-2022 15:44:45

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1525 Lab Sample ID: 410-109343-1

Matrix: Air Lab File ID: 6D15X11.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 19:38

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND	*+	1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND	*+	1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1525 Lab Sample ID: 410-109343-1

Matrix: Air Lab File ID: 6D15X11.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 19:38

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND	*-	1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1525 Lab Sample ID: 410-109343-1

Matrix: Air Lab File ID: 6D15X11.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 19:38

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X11.D				
Lims ID:	410-109343-A-1				
Client ID:	1525				
Sample Type:	Client				
Inject. Date:	15-Dec-2022 19:38:59	ALS Bottle#:	0	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	109343-1				
Misc. Info.:	410-0073395-011				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	16-Dec-2022 11:25:09	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1602				
First Level Reviewer: MLX9		Date:	16-Dec-2022 09:15:20		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
23 Acetone	43	3.475	3.468	0.007	99	5220	0.3945	
* 35 Chlorobromomethane (IS)	130	5.245	5.237	0.008	85	114836	10.0	
* 50 1,4-Difluorobenzene	114	6.185	6.182	0.003	93	320318	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.731	0.000	83	350986	10.0	

QC Flag Legend

Processing Flags

Reagents:

AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 16-Dec-2022 13:25:37 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File: \\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X11.D

Injection Date: 15-Dec-2022 19:38:59 Instrument ID: HP26379

Lims ID: 410-109343-A-1 Lab Sample ID: 410-109343-1

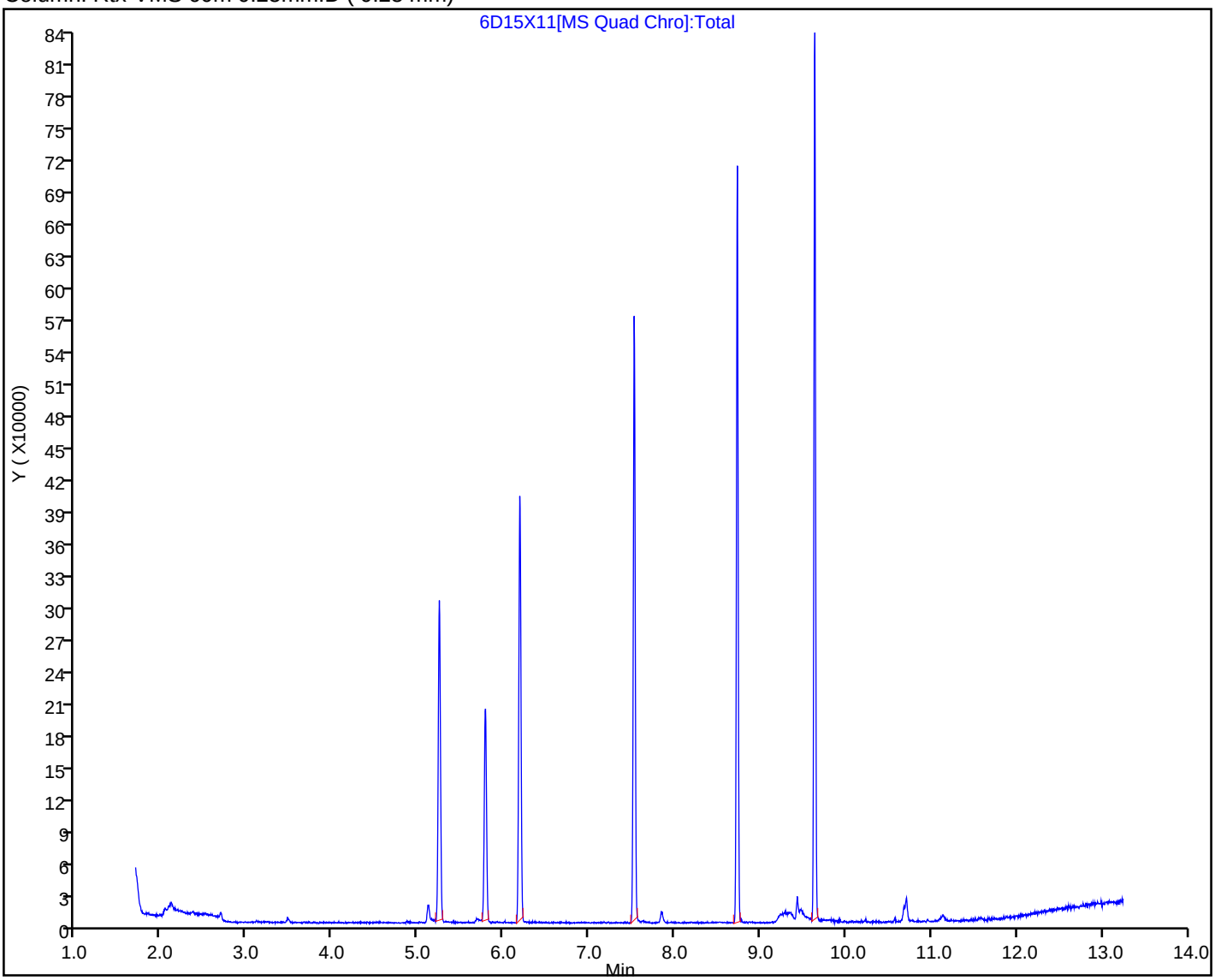
Client ID: 1525

Operator ID: rrm00219 ALS Bottle#: 0 Worklist Smp#: 11

Purge Vol: 200.000 mL Dil. Factor: 1.0000

Method: AirMS_HP26379 Limit Group: MSV - TO15

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



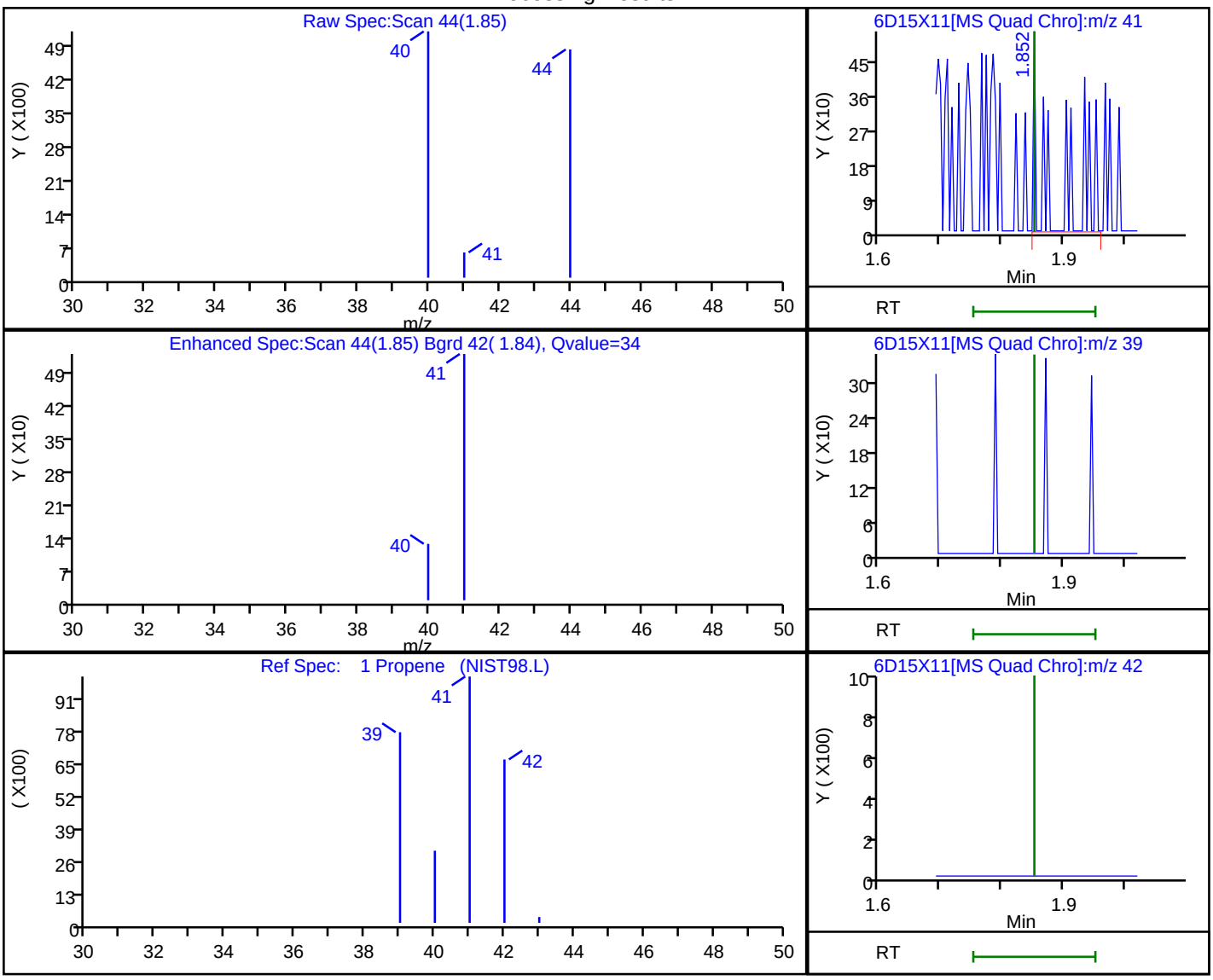
User Disabled Compound Report

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X11.D				
Injection Date:	15-Dec-2022 19:38:59	Instrument ID:	HP26379		
Lims ID:	410-109343-A-1	Lab Sample ID:	410-109343-1		
Client ID:	1525				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	11
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		
Column:	Rtx-VMS 60m 0.25mmID (0.25 mm)	Detector	MS Quad		

1 Propene, CAS: 115-07-1

Processing Results



RT	Mass	Response	Amount
1.85	41.00	663	0.081828
1.85	39.00	0	
1.85	42.00	0	

Reviewer: MLX9, 16-Dec-2022 09:14:45

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1276 Lab Sample ID: 410-109343-2

Matrix: Air Lab File ID: 6D15X12.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND	*+	1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND	*+	1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1276 Lab Sample ID: 410-109343-2

Matrix: Air Lab File ID: 6D15X12.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND	*-	1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1276 Lab Sample ID: 410-109343-2

Matrix: Air Lab File ID: 6D15X12.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:07

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X12.D				
Lims ID:	410-109343-A-2				
Client ID:	1276				
Sample Type:	Client				
Inject. Date:	15-Dec-2022 20:07:42	ALS Bottle#:	0	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	109343-2				
Misc. Info.:	410-0073395-012				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	16-Dec-2022 11:25:09	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1602				
First Level Reviewer: MLX9		Date:	16-Dec-2022 09:16:06		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
23 Acetone	43	3.456	3.468	-0.012	98	6231	0.4751	
* 35 Chlorobromomethane (IS)	130	5.241	5.237	0.004	85	113829	10.0	
* 50 1,4-Difluorobenzene	114	6.185	6.182	0.003	93	315873	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.731	0.000	83	344006	10.0	

QC Flag Legend

Processing Flags

Reagents:

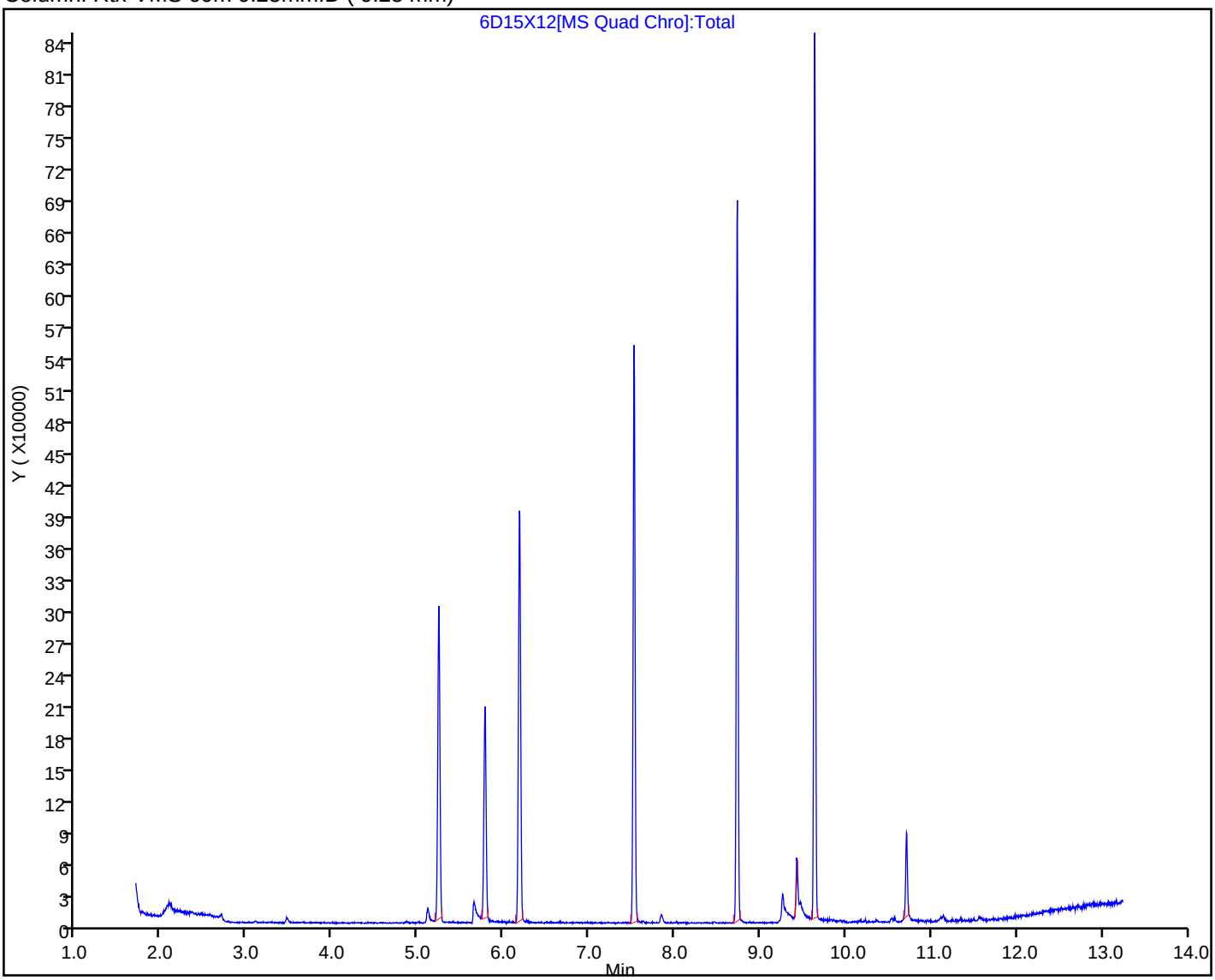
AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 16-Dec-2022 13:25:38 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X12.D				
Injection Date:	15-Dec-2022 20:07:42	Instrument ID:	HP26379		
Lims ID:	410-109343-A-2	Lab Sample ID:	410-109343-2		
Client ID:	1276				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	12
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1463 Lab Sample ID: 410-109343-3

Matrix: Air Lab File ID: 6D15X13.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND	*+	1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND	*+	1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1463 Lab Sample ID: 410-109343-3

Matrix: Air Lab File ID: 6D15X13.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND	*-	1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1463 Lab Sample ID: 410-109343-3

Matrix: Air Lab File ID: 6D15X13.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 20:36

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X13.D				
Lims ID:	410-109343-A-3				
Client ID:	1463				
Sample Type:	Client				
Inject. Date:	15-Dec-2022 20:36:15	ALS Bottle#:	0	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	109343-3				
Misc. Info.:	410-0073395-013				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	16-Dec-2022 11:25:09	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1602				
First Level Reviewer: MLX9		Date:	16-Dec-2022 09:16:46		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
23 Acetone	43	3.456	3.468	-0.012	97	4696	0.3657	
* 35 Chlorobromomethane (IS)	130	5.241	5.237	0.004	85	111451	10.0	
* 50 1,4-Difluorobenzene	114	6.182	6.182	0.000	93	308151	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.731	0.000	83	336097	10.0	

QC Flag Legend

Processing Flags

Reagents:

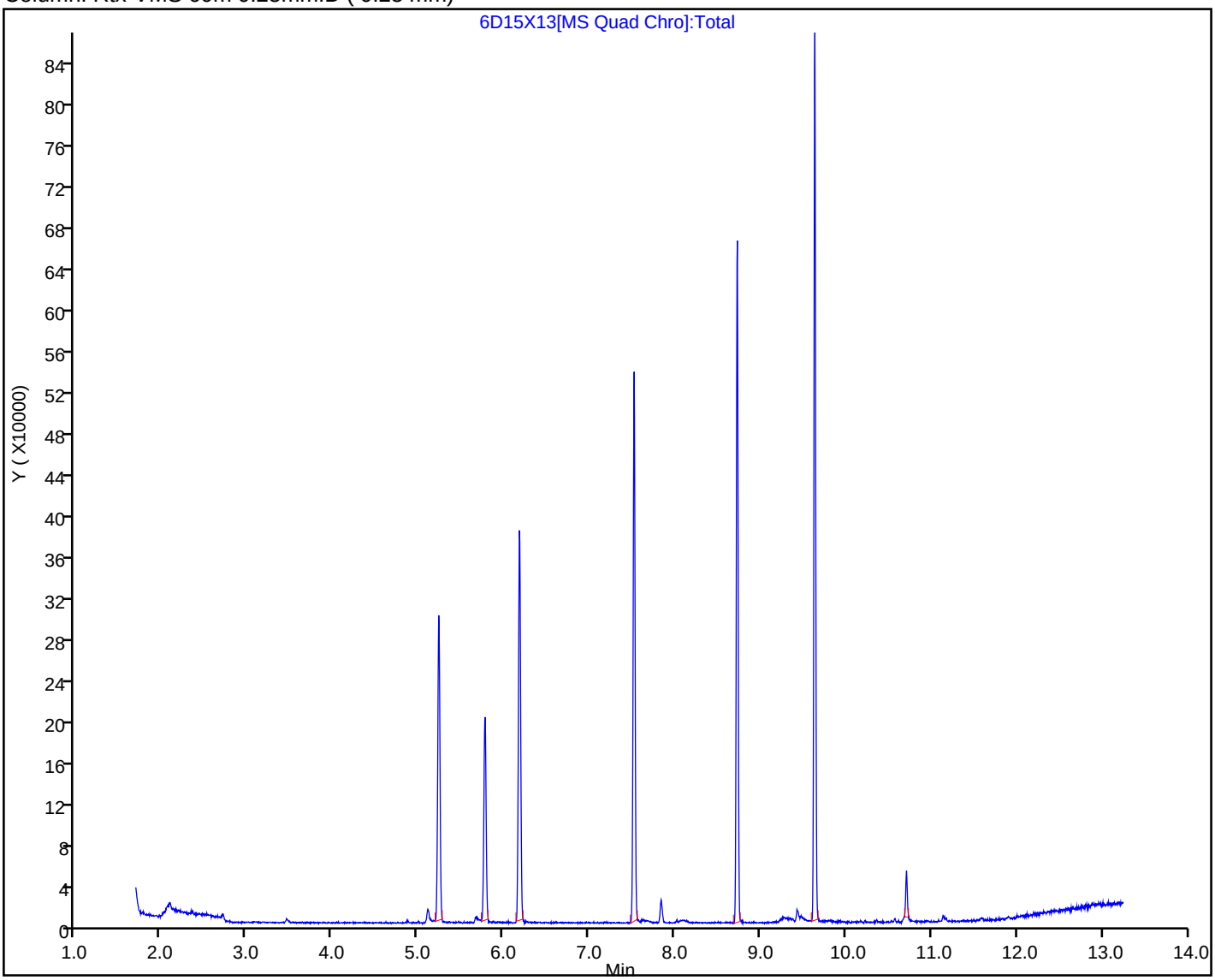
AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 16-Dec-2022 13:25:39 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X13.D				
Injection Date:	15-Dec-2022 20:36:15	Instrument ID:	HP26379		
Lims ID:	410-109343-A-3	Lab Sample ID:	410-109343-3		
Client ID:	1463				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



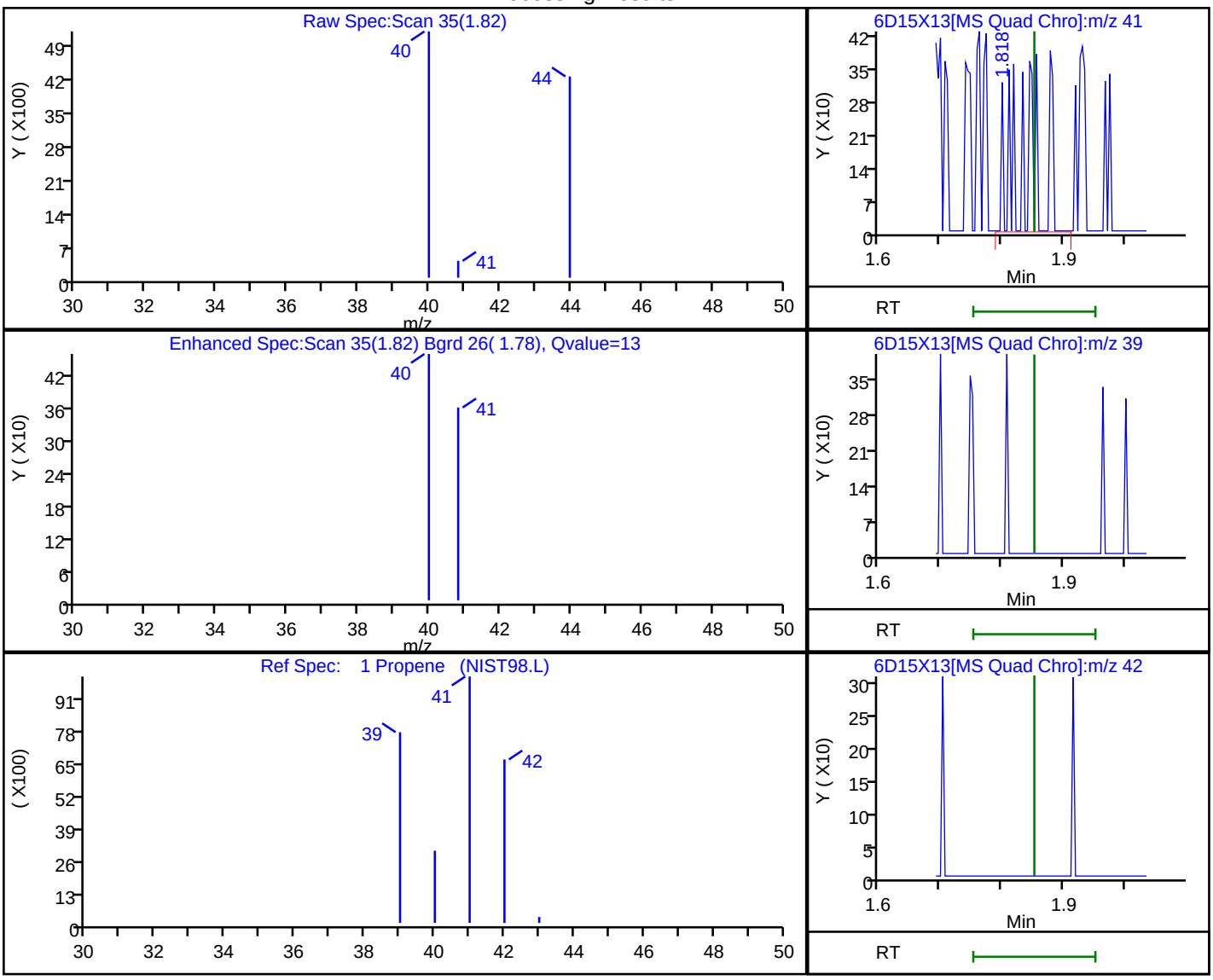
User Disabled Compound Report

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X13.D				
Injection Date:	15-Dec-2022 20:36:15	Instrument ID:	HP26379		
Lims ID:	410-109343-A-3	Lab Sample ID:	410-109343-3		
Client ID:	1463				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	13
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		
Column:	Rtx-VMS 60m 0.25mmID (0.25 mm)	Detector	MS Quad		

1 Propene, CAS: 115-07-1

Processing Results



RT	Mass	Response	Amount
1.82	41.00	701	0.089146
1.85	39.00	0	
1.85	42.00	0	

Reviewer: MLX9, 16-Dec-2022 09:16:16

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1420 Lab Sample ID: 410-109343-4

Matrix: Air Lab File ID: 6D15X14.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:04

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND	*+	1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND	*+	1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1420 Lab Sample ID: 410-109343-4

Matrix: Air Lab File ID: 6D15X14.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:04

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND	*-	1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1420 Lab Sample ID: 410-109343-4

Matrix: Air Lab File ID: 6D15X14.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:04

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC

Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X14.D				
Lims ID:	410-109343-A-4				
Client ID:	1420				
Sample Type:	Client				
Inject. Date:	15-Dec-2022 21:04:51	ALS Bottle#:	0	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	109343-4				
Misc. Info.:	410-0073395-014				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	16-Dec-2022 11:25:09	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1602				
First Level Reviewer: MLX9		Date:	16-Dec-2022 09:19:36		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
23 Acetone	43	3.460	3.468	-0.008	70	4004	0.3161	
* 35 Chlorobromomethane (IS)	130	5.241	5.237	0.004	85	109938	10.0	
* 50 1,4-Difluorobenzene	114	6.182	6.182	0.000	94	296083	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.731	0.000	84	330521	10.0	

QC Flag Legend

Processing Flags

Reagents:

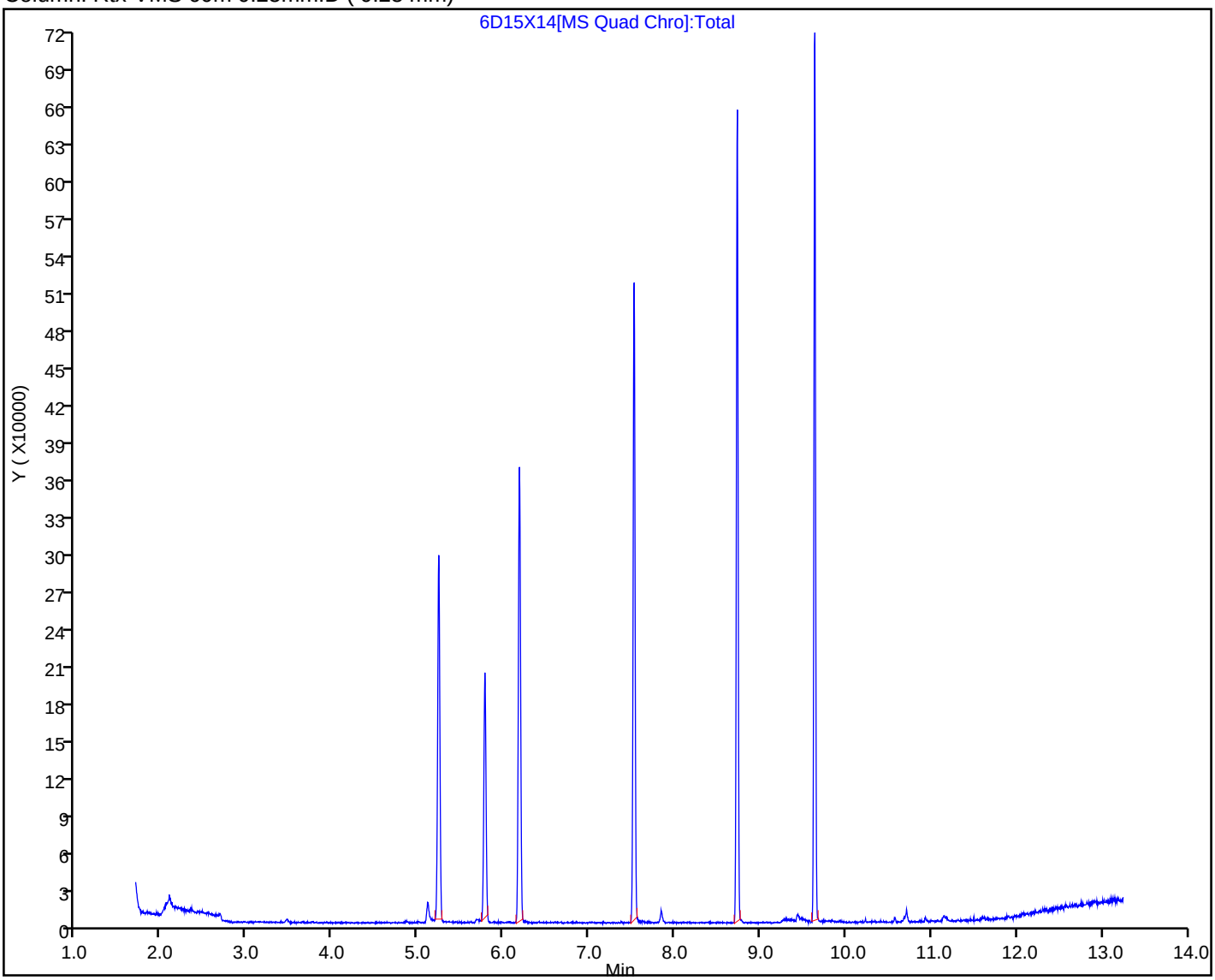
AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 16-Dec-2022 13:25:40 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X14.D				
Injection Date:	15-Dec-2022 21:04:51	Instrument ID:	HP26379		
Lims ID:	410-109343-A-4	Lab Sample ID:	410-109343-4		
Client ID:	1420				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	14
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1110 Lab Sample ID: 410-109343-5

Matrix: Air Lab File ID: 6D15X15.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:33

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
630-20-6	1,1,1,2-Tetrachloroethane	ND	*+	1.0	0.15
71-55-6	1,1,1-Trichloroethane	ND		1.0	0.12
79-34-5	1,1,2,2-Tetrachloroethane	ND		1.0	0.15
79-00-5	1,1,2-Trichloroethane	ND		1.0	0.12
75-34-3	1,1-Dichloroethane	ND		1.0	0.089
75-35-4	1,1-Dichloroethene	ND		1.0	0.14
96-18-4	1,2,3-Trichloropropane	ND		1.0	0.14
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.50
95-63-6	1,2,4-Trimethylbenzene	ND		2.0	0.28
106-93-4	1,2-Dibromoethane	ND		1.0	0.13
96-12-8	1,2-Dibromo-3-Chloropropane	ND		2.0	0.28
95-50-1	1,2-Dichlorobenzene	ND	*+	1.0	0.20
107-06-2	1,2-Dichloroethane	ND		1.0	0.080
78-87-5	1,2-Dichloropropane	ND		1.0	0.13
108-67-8	1,3,5-Trimethylbenzene	ND		2.0	0.32
540-59-0	1,2-Dichloroethene (total)	ND		1.0	0.20
106-99-0	1,3-Butadiene	ND		1.0	0.17
541-73-1	1,3-Dichlorobenzene	ND		1.0	0.30
106-46-7	1,4-Dichlorobenzene	ND		1.0	0.30
78-93-3	2-Butanone	ND		1.0	0.21
591-78-6	2-Hexanone	ND		2.0	0.18
542-75-6	1,3-Dichloropropene, Total	ND		1.0	0.10
107-05-1	3-Chloroprene	ND		1.0	0.20
622-96-8	4-Ethyltoluene	ND		1.0	0.18
108-10-1	4-Methyl-2-pentanone	ND		1.0	0.15
67-64-1	Acetone	ND		5.0	0.53
71-43-2	Benzene	ND		1.0	0.11
108-86-1	Bromobenzene	ND		1.0	0.20
75-27-4	Bromodichloromethane	ND		1.0	0.12
75-25-2	Bromoform	ND		1.0	0.17
74-83-9	Bromomethane	ND		1.0	0.20
75-15-0	Carbon disulfide	ND		1.0	0.13
56-23-5	Carbon tetrachloride	ND		1.0	0.14

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1110 Lab Sample ID: 410-109343-5

Matrix: Air Lab File ID: 6D15X15.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:33

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
108-90-7	Chlorobenzene	ND		1.0	0.13
75-45-6	Chlorodifluoromethane	ND		1.0	0.15
75-00-3	Chloroethane	ND		1.0	0.30
67-66-3	Chloroform	ND		1.0	0.092
74-87-3	Chloromethane	ND		1.0	0.24
156-59-2	cis-1,2-Dichloroethene	ND		1.0	0.20
10061-01-5	cis-1,3-Dichloropropene	ND		1.0	0.10
593-60-2	Bromoethene	ND		1.0	0.18
98-82-8	Cumene	ND		1.0	0.24
124-48-1	Dibromochloromethane	ND		1.0	0.13
74-95-3	Dibromomethane	ND		1.0	0.14
75-71-8	Dichlorodifluoromethane	ND		1.0	0.13
75-43-4	Dichlorofluoromethane	ND		1.0	0.11
100-41-4	Ethylbenzene	ND		1.0	0.19
76-13-1	Freon 113	ND		1.0	0.20
76-14-2	Freon-114	ND		1.0	0.12
142-82-5	Heptane	ND		1.0	0.23
67-72-1	Hexachloroethane	ND		2.0	0.27
110-54-3	Hexane	ND		1.0	0.30
540-84-1	Isooctane	ND		1.0	0.20
179601-23-1	m&p-Xylene	ND		1.0	0.26
1634-04-4	Methyl t-butyl ether	ND		1.0	0.15
75-09-2	Methylene Chloride	ND		2.0	0.25
95-47-6	o-Xylene	ND		1.0	0.19
111-65-9	Octane	ND		2.0	0.40
109-66-0	Pentane	ND	*-	1.0	0.20
100-42-5	Styrene	ND		1.0	0.20
127-18-4	Tetrachloroethene	ND		2.0	0.25
108-88-3	Toluene	ND		1.0	0.12
156-60-5	trans-1,2-Dichloroethene	ND		1.0	0.20
10061-02-6	trans-1,3-Dichloropropene	ND		1.0	0.12
79-01-6	Trichloroethene	ND		1.0	0.18
75-69-4	Trichlorofluoromethane	ND		1.0	0.15

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Lancaster Laboratories Environment Testing, LLC Job No.: 410-109343-1

SDG No.:

Client Sample ID: 1110 Lab Sample ID: 410-109343-5

Matrix: Air Lab File ID: 6D15X15.D

Analysis Method: TO-15 Date Collected: 12/14/2022 23:31

Sample wt/vol: 200(mL) Date Analyzed: 12/15/2022 21:33

Soil Aliquot Vol: Dilution Factor: 1

Soil Extract Vol.: GC Column: Rtx-VMS 60m ID: 0.25(mm)

Purge Volume: Heated Purge: (Y/N) pH:

% Moisture: % Solids: Level: (low/med) Low

Analysis Batch No.: 327546 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		1.0	0.12
67-63-0	Isopropanol	ND		1.0	0.40
91-20-3	Naphthalene	ND		2.0	1.0
1330-20-7	Xylenes, Total	ND		2.0	0.19
96-33-3	Methyl acrylate	ND		1.0	0.20
109-99-9	Tetrahydrofuran	ND		1.0	0.24
141-78-6	Ethyl acetate	ND		2.0	0.25
80-62-6	Methyl methacrylate	ND		1.0	0.15
75-65-0	tert-Butyl alcohol	ND		1.0	0.21
100-44-7	Benzyl chloride	ND	*+	2.0	0.30
87-68-3	Hexachlorobutadiene	ND		2.0	0.47
104-51-8	n-Butylbenzene	ND		2.0	0.26
95-49-8	2-Chlorotoluene	ND		1.0	0.22
75-05-8	Acetonitrile	ND		5.0	0.83
115-07-1	Propene	ND		1.0	0.30
123-91-1	1,4-Dioxane	ND		1.0	0.17
74-88-4	Iodomethane	ND		1.0	0.20
107-13-1	Acrylonitrile	ND		1.0	0.20
98-83-9	Alpha Methyl Styrene	ND		1.0	0.20
97-63-2	Ethyl methacrylate	ND		1.0	0.19
135-98-8	sec-Butylbenzene	ND		2.0	0.39
103-65-1	N-Propylbenzene	ND		1.0	0.21
637-92-3	Ethyl tert-butyl ether	ND		1.0	0.15
108-20-3	di-Isopropyl ether	ND		1.0	0.15
110-82-7	Cyclohexane	ND		1.0	0.20
107-02-8	Acrolein	ND		5.0	0.62
64-17-5	Ethanol	ND		5.0	2.0
99-87-6	p-Isopropyltoluene	ND		2.0	0.28
140-88-5	Ethyl acrylate	ND		1.0	0.16
994-05-8	Tert-amyl methyl ether	ND		1.0	0.11
108-05-4	Vinyl acetate	ND		1.0	0.16
98-06-6	tert-Butylbenzene	ND		5.0	0.76

Eurofins Lancaster Laboratories Environment Testing, LLC
Target Compound Quantitation Report

Data File:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\6D15X15.D				
Lims ID:	410-109343-A-5				
Client ID:	1110				
Sample Type:	Client				
Inject. Date:	15-Dec-2022 21:33:25	ALS Bottle#:	0	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Sample Info:	109343-5				
Misc. Info.:	410-0073395-015				
Operator ID:	rrm00219	Instrument ID:	HP26379		
Method:	\\chromfs\Lancaster\ChromData\HP26379\20221215-73395.b\AirMS_HP26379.m				
Limit Group:	MSV - TO15				
Last Update:	16-Dec-2022 11:25:09	Calib Date:	30-Nov-2022 19:10:58		
Integrator:	Falcon	ID Type:	Deconvolution ID		
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Lancaster\ChromData\HP26379\20221130-72202.b\6N30X17.D				
Column 1 :	Rtx-VMS 60m 0.25mmID (0.25 mm)		Det: MS Quad		
Process Host:	CTX1602				
First Level Reviewer: MLX9		Date:	16-Dec-2022 09:21:20		

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
23 Acetone	43	3.468	3.468	0.000	97	3691	0.2846	
* 35 Chlorobromomethane (IS)	130	5.241	5.237	0.004	85	112557	10.0	
* 50 1,4-Difluorobenzene	114	6.185	6.182	0.003	93	297791	10.0	
* 68 Chlorobenzene-d5 (IS)	117	8.731	8.731	0.000	83	328655	10.0	

QC Flag Legend

Processing Flags

Reagents:

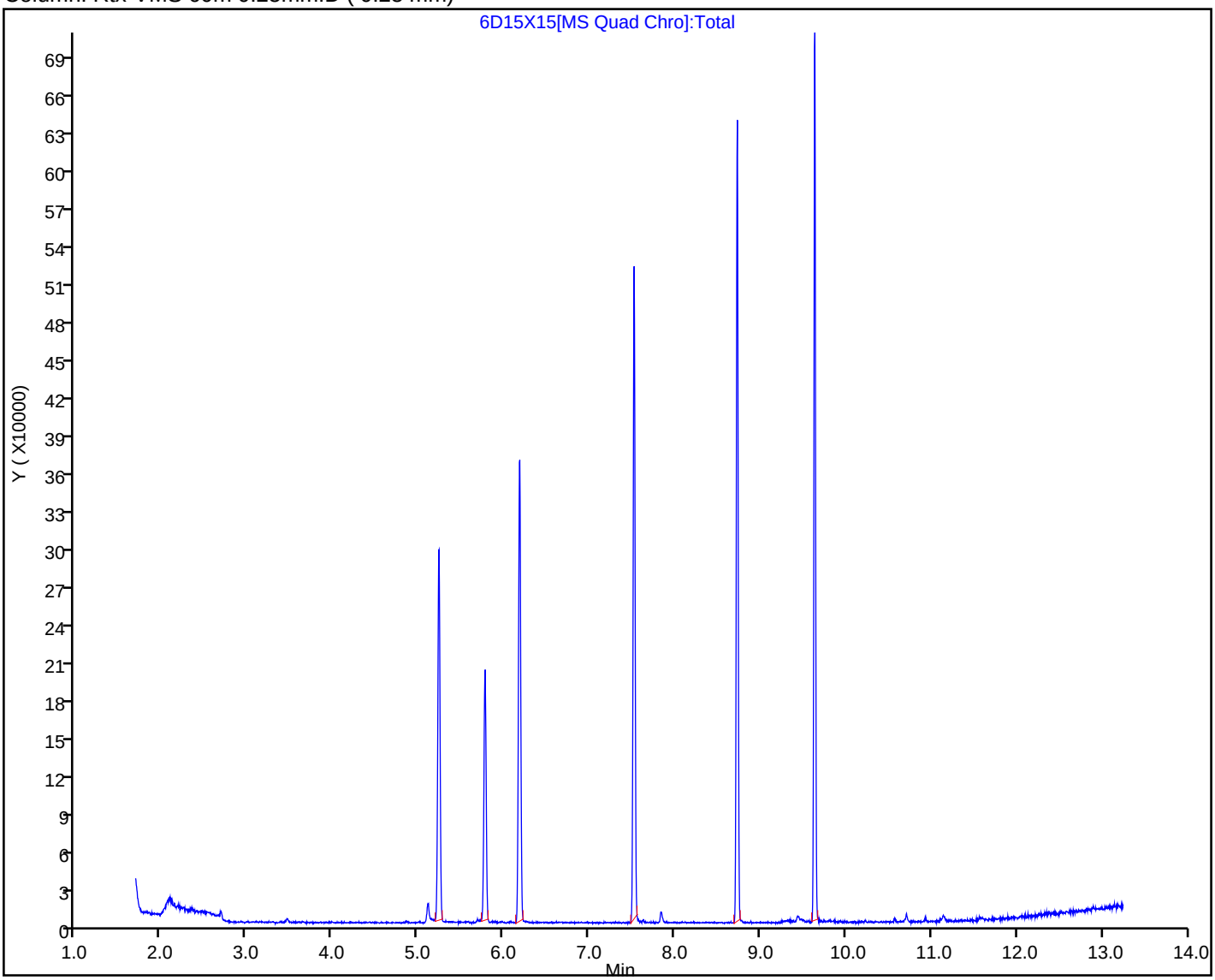
AIRIS200 ppb_00182 Amount Added: 10.00 Units: mL Run Reagent

Report Date: 16-Dec-2022 13:25:41 Chrom Revision: 2.3 01-Dec-2022 08:01:02

Eurofins Lancaster Laboratories Environment Testing, LLC

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Injection Date:	15-Dec-2022 21:33:25	Instrument ID:	HP26379		
Lims ID:	410-109343-A-5	Lab Sample ID:	410-109343-5		
Client ID:	1110				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		

Column: Rtx-VMS 60m 0.25mmID (0.25 mm)



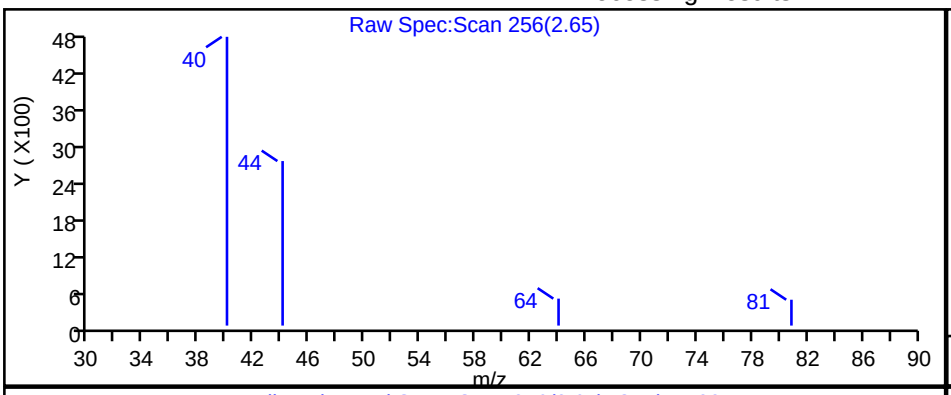
User Disabled Compound Report

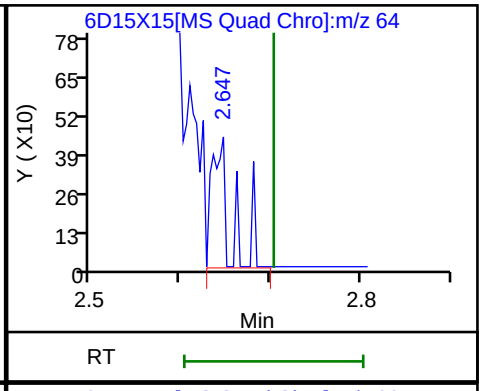
Eurofins Lancaster Laboratories Environment Testing, LLC

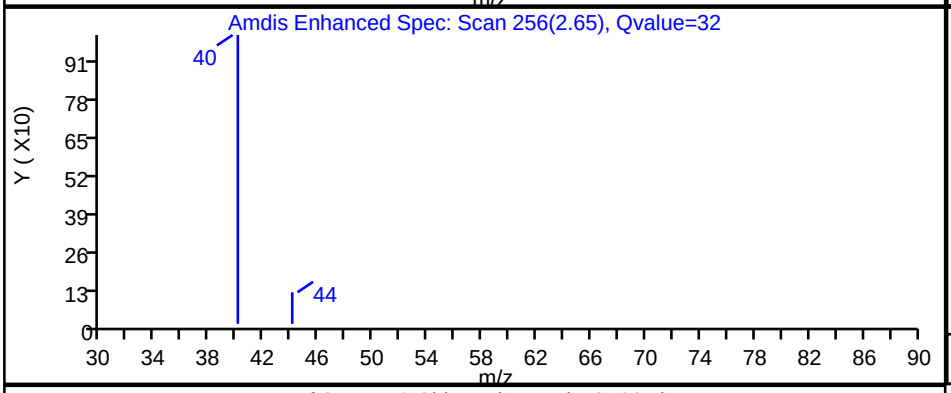
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Injection Date:	15-Dec-2022 21:33:25	Instrument ID:	HP26379		
Lims ID:	410-109343-A-5	Lab Sample ID:	410-109343-5		
Client ID:	1110				
Operator ID:	rrm00219	ALS Bottle#:	0	Worklist Smp#:	15
Purge Vol:	200.000 mL	Dil. Factor:	1.0000		
Method:	AirMS_HP26379	Limit Group:	MSV - TO15		
Column:	Rtx-VMS 60m 0.25mmID (0.25 mm)	Detector	MS Quad		

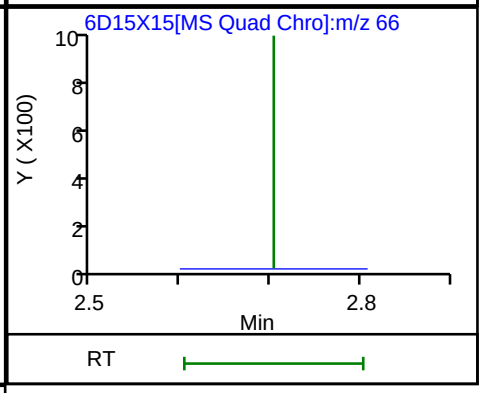
9 Chloroethane, CAS: 75-00-3

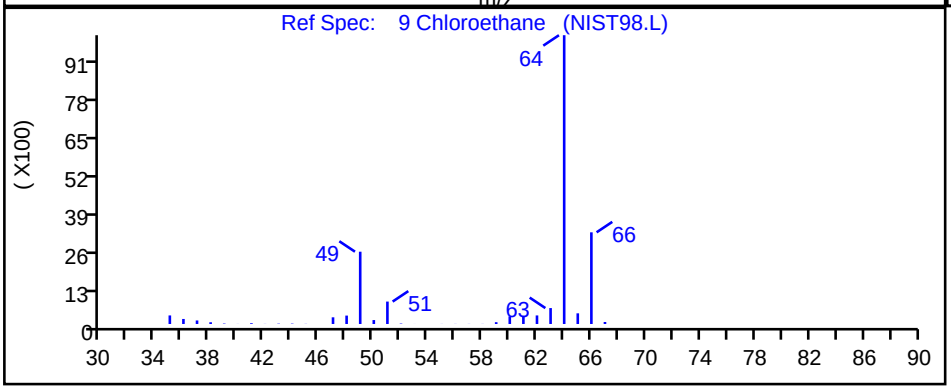
Processing Results











RT	Mass	Response	Amount
2.65	64.00	570	0.110900
2.70	66.00	0	

Reviewer: MLX9, 16-Dec-2022 09:20:47

Audit Action: Marked Compound Undetected Audit Reason: Invalid Compound ID

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 3/27/2023 11:55:08 AM

JOB DESCRIPTION

NASA KSC POL

JOB NUMBER

670-16084-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

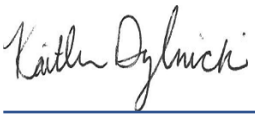
my EOL

Job Notes

The test results in this report meet NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted. Results pertain only to samples listed in this report. This report may not be reproduced, except in full, without the written approval of the laboratory. Questions should be directed to the person who signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: Tetra Tech, Inc.
Job ID: 670-16084-1
Project/Site: NASA KSC POL

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-16084-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-16084-1

Receipt
The samples were received on 3/10/2023 4:53 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 0.3º C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 400-617507 recovered above the upper control limit for Acetone and Methyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 400-617507 recovered outside acceptance criteria, low biased, for Dichlorodifluoromethane. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The matrix spike (MS) recovery for analytical batch 400-617507 was outside control limits for one or more analytes, see QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8260D: The continuing calibration verification (CCV) associated with batch 400-617716 recovered above the upper control limit for Acetone and Bromomethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: POL-MW0026S-014.8-20230309 (670-16084-12). Elevated reporting limits (RLs) are provided.

Method 8260D: The following sample was diluted to bring the concentration of target analytes within the calibration range: POL-MW0034S-010.0-20230310 (670-16084-15). Elevated reporting limits (RLs) are provided.

Method 8260D: The continuing calibration verification (CCV) associated with batch 400-617882 recovered above the upper control limit for 1,2-Dichloroethane, Acetone and Methyl acetate. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0014I-027.5-20230309 — Lab Sample ID: 670-16084-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.21	I	1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0014ID-034.5-20230309 — Lab Sample ID: 670-16084-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.36	I	1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0022D-042.5 -20230309 — Lab Sample ID: 670-16084-3

No Detections.

Client Sample ID: POL-MW0014SI-020.5-20230309 — Lab Sample ID: 670-16084-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.69	I	1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0022I-027.5 -20230309 — Lab Sample ID: 670-16084-5

No Detections.

Client Sample ID: POL-MW0012S-013.5-20230309 — Lab Sample ID: 670-16084-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.0		1.0	0.20	ug/L	1		8260D	Total/NA
Trichloroethene	0.36	I	1.0	0.15	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0017S-013.5-20230309 — Lab Sample ID: 670-16084-7

No Detections.

Client Sample ID: POL-MW0012I-030.5-20230309 — Lab Sample ID: 670-16084-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.34	I	1.0	0.20	ug/L	1		8260D	Total/NA
Vinyl chloride	0.52	I	1.0	0.50	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0031S-010.0-20230309 — Lab Sample ID: 670-16084-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	10	I	25	10	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.71	I	1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0026I-027.5-20230309 — Lab Sample ID: 670-16084-10

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.1		1.0	0.20	ug/L	1		8260D	Total/NA
Vinyl chloride	0.56	I	1.0	0.50	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0035SI-020.5-20230309 — Lab Sample ID: 670-16084-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.7		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0026S-014.8-20230309 — Lab Sample ID: 670-16084-12

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	28	I	50	20	ug/L	2		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample ID: POL-MW0026S-014.8-20230309 (Continued) — Lab Sample ID: 670-16084-12

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	110		2.0	0.40	ug/L	2		8260D	Total/NA
trans-1,2-Dichloroethene	5.5		2.0	1.0	ug/L	2		8260D	Total/NA
Trichloroethene	1.3	I	2.0	0.30	ug/L	2		8260D	Total/NA
Vinyl chloride	14		2.0	1.0	ug/L	2		8260D	Total/NA

Client Sample ID: POL-MW0028S-010.0-20230309 — Lab Sample ID: 670-16084-13

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.33	I	1.0	0.20	ug/L	1		8260D	Total/NA
Trichloroethene	0.27	I	1.0	0.15	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0028I-027.5-20230310 — Lab Sample ID: 670-16084-14

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.32	I	1.0	0.20	ug/L	1		8260D	Total/NA
Vinyl chloride	0.64	I	1.0	0.50	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0034S-010.0-20230310 — Lab Sample ID: 670-16084-15

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	66		5.0	1.0	ug/L	5		8260D	Total/NA
Trichloroethene	540		5.0	0.75	ug/L	5		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0014I-027.5-20230309
Date Collected: 03/09/23 09:25
Date Received: 03/10/23 16:53

Lab Sample ID: 670-16084-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 00:13	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 00:13	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 00:13	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 00:13	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 00:13	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 00:13	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 00:13	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 00:13	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 00:13	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 00:13	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 00:13	1
Acetone	10	U	25	10	ug/L			03/23/23 00:13	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 00:13	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 00:13	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 00:13	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 00:13	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 00:13	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 00:13	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 00:13	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 00:13	1
cis-1,2-Dichloroethene	**0.21**	**I**	1.0	0.20	ug/L			03/23/23 00:13	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 00:13	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 00:13	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 00:13	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 00:13	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 00:13	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 00:13	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 00:13	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 00:13	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 00:13	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 00:13	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 00:13	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 00:13	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 00:13	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 00:13	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 00:13	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 00:13	1

Client Sample ID: POL-MW0014I-027.5-20230309

Lab Sample ID: 670-16084-1

Date Collected: 03/09/23 09:25

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 00:13*	*1*
Dibromofluoromethane	*111*		*75 - 126*		*03/23/23 00:13*	*1*
4-Bromofluorobenzene	*93*		*72 - 119*		*03/23/23 00:13*	*1*

Client Sample ID: POL-MW0014ID-034.5-20230309

Lab Sample ID: 670-16084-2

Date Collected: 03/09/23 10:25

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 00:37	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 00:37	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 00:37	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 00:37	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 00:37	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 00:37	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 00:37	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 00:37	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 00:37	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 00:37	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 00:37	1
Acetone	10	U	25	10	ug/L			03/23/23 00:37	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 00:37	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 00:37	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 00:37	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 00:37	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 00:37	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 00:37	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 00:37	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 00:37	1
cis-1,2-Dichloroethene	**0.36**	**I**	1.0	0.20	ug/L			03/23/23 00:37	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 00:37	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 00:37	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 00:37	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 00:37	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 00:37	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 00:37	1

Client Sample ID: POL-MW0014ID-034.5-20230309
Lab Sample ID: 670-16084-2

Date Collected: 03/09/23 10:25
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 00:37	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 00:37	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 00:37	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 00:37	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 00:37	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 00:37	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 00:37	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 00:37	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 00:37	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 00:37	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 00:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*64 - 132*		*03/23/23 00:37*	*1*
Dibromofluoromethane	*113*		*75 - 126*		*03/23/23 00:37*	*1*
4-Bromofluorobenzene	*91*		*72 - 119*		*03/23/23 00:37*	*1*

Client Sample ID: POL-MW0022D-042.5 -20230309
Lab Sample ID: 670-16084-3

Date Collected: 03/09/23 11:10
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 01:02	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 01:02	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 01:02	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 01:02	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 01:02	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 01:02	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 01:02	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 01:02	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 01:02	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 01:02	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 01:02	1
Acetone	10	U	25	10	ug/L			03/23/23 01:02	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 01:02	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 01:02	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 01:02	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 01:02	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 01:02	1

Client Sample ID: POL-MW0022D-042.5 -20230309
Lab Sample ID: 670-16084-3

Date Collected: 03/09/23 11:10
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 01:02	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 01:02	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 01:02	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/23/23 01:02	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 01:02	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 01:02	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 01:02	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 01:02	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 01:02	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 01:02	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 01:02	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 01:02	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 01:02	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 01:02	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 01:02	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 01:02	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 01:02	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 01:02	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 01:02	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 01:02	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 01:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 01:02*	*1*
Dibromofluoromethane	*113*		*75 - 126*		*03/23/23 01:02*	*1*
4-Bromofluorobenzene	*92*		*72 - 119*		*03/23/23 01:02*	*1*

Client Sample ID: POL-MW0014SI-020.5-20230309
Lab Sample ID: 670-16084-4

Date Collected: 03/09/23 11:25
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 01:27	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 01:27	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 01:27	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 01:27	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 01:27	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 01:27	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 01:27	1

Client Sample ID: POL-MW0014SI-020.5-20230309

Lab Sample ID: 670-16084-4

Date Collected: 03/09/23 11:25

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 01:27	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 01:27	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 01:27	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 01:27	1
Acetone	10	U	25	10	ug/L			03/23/23 01:27	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 01:27	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 01:27	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 01:27	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 01:27	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 01:27	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 01:27	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 01:27	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 01:27	1
cis-1,2-Dichloroethene	**0.69**	**I**	1.0	0.20	ug/L			03/23/23 01:27	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 01:27	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 01:27	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 01:27	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 01:27	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 01:27	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 01:27	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 01:27	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 01:27	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 01:27	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 01:27	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 01:27	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 01:27	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 01:27	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 01:27	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 01:27	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 01:27	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 01:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 01:27*	*1*
Dibromofluoromethane	*111*		*75 - 126*		*03/23/23 01:27*	*1*
4-Bromofluorobenzene	*94*		*72 - 119*		*03/23/23 01:27*	*1*

Client Sample ID: POL-MW0022I-027.5 -20230309

Lab Sample ID: 670-16084-5

Date Collected: 03/09/23 11:50

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 01:52	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0022I-027.5 -20230309
Date Collected: 03/09/23 11:50
Date Received: 03/10/23 16:53

Lab Sample ID: 670-16084-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 01:52	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 01:52	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 01:52	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 01:52	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 01:52	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 01:52	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 01:52	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 01:52	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 01:52	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 01:52	1
Acetone	10	U	25	10	ug/L			03/23/23 01:52	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 01:52	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 01:52	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 01:52	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 01:52	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 01:52	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 01:52	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 01:52	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 01:52	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/23/23 01:52	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 01:52	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 01:52	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 01:52	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 01:52	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 01:52	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 01:52	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 01:52	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 01:52	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 01:52	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 01:52	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 01:52	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 01:52	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 01:52	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 01:52	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 01:52	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 01:52	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 01:52	1

Client Sample ID: POL-MW0022I-027.5 -20230309

Lab Sample ID: 670-16084-5

Date Collected: 03/09/23 11:50

Matrix: Water

Date Received: 03/10/23 16:53

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*64 - 132*		*03/23/23 01:52*	*1*
Dibromofluoromethane	*112*		*75 - 126*		*03/23/23 01:52*	*1*
4-Bromofluorobenzene	*95*		*72 - 119*		*03/23/23 01:52*	*1*

Client Sample ID: POL-MW0012S-013.5-20230309

Lab Sample ID: 670-16084-6

Date Collected: 03/09/23 13:05

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 02:16	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 02:16	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 02:16	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 02:16	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 02:16	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 02:16	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 02:16	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 02:16	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 02:16	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 02:16	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 02:16	1
Acetone	10	U	25	10	ug/L			03/23/23 02:16	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 02:16	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 02:16	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 02:16	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 02:16	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 02:16	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 02:16	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 02:16	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 02:16	1
cis-1,2-Dichloroethene	**2.0**		1.0	0.20	ug/L			03/23/23 02:16	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 02:16	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 02:16	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 02:16	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 02:16	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 02:16	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 02:16	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 02:16	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 02:16	1

Client Sample ID: POL-MW0012S-013.5-20230309
Lab Sample ID: 670-16084-6

Date Collected: 03/09/23 13:05
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 02:16	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 02:16	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 02:16	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 02:16	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 02:16	1
Trichloroethene	**0.36**	**I**	1.0	0.15	ug/L			03/23/23 02:16	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 02:16	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 02:16	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*64 - 132*		*03/23/23 02:16*	*1*
Dibromofluoromethane	*114*		*75 - 126*		*03/23/23 02:16*	*1*
4-Bromofluorobenzene	*93*		*72 - 119*		*03/23/23 02:16*	*1*

Client Sample ID: POL-MW0017S-013.5-20230309
Lab Sample ID: 670-16084-7

Date Collected: 03/09/23 13:20
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 02:41	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 02:41	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 02:41	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 02:41	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 02:41	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 02:41	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 02:41	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 02:41	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 02:41	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 02:41	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 02:41	1
Acetone	10	U	25	10	ug/L			03/23/23 02:41	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 02:41	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 02:41	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 02:41	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 02:41	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 02:41	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 02:41	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 02:41	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 02:41	1

Client Sample ID: POL-MW0017S-013.5-20230309

Lab Sample ID: 670-16084-7

Date Collected: 03/09/23 13:20

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/23/23 02:41	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 02:41	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 02:41	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 02:41	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 02:41	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 02:41	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 02:41	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 02:41	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 02:41	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 02:41	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 02:41	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 02:41	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 02:41	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 02:41	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 02:41	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 02:41	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 02:41	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 02:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 02:41*	*1*
Dibromofluoromethane	*114*		*75 - 126*		*03/23/23 02:41*	*1*
4-Bromofluorobenzene	*93*		*72 - 119*		*03/23/23 02:41*	*1*

Client Sample ID: POL-MW0012I-030.5-20230309

Lab Sample ID: 670-16084-8

Date Collected: 03/09/23 14:10

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 03:06	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 03:06	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 03:06	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 03:06	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 03:06	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 03:06	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 03:06	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 03:06	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 03:06	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 03:06	1

Client Sample ID: POL-MW0012I-030.5-20230309

Lab Sample ID: 670-16084-8

Date Collected: 03/09/23 14:10

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 03:06	1
Acetone	10	U	25	10	ug/L			03/23/23 03:06	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 03:06	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 03:06	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 03:06	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 03:06	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 03:06	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 03:06	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 03:06	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 03:06	1
cis-1,2-Dichloroethene	**0.34**	**I**	1.0	0.20	ug/L			03/23/23 03:06	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 03:06	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 03:06	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 03:06	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 03:06	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 03:06	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 03:06	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 03:06	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 03:06	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 03:06	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 03:06	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 03:06	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 03:06	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 03:06	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 03:06	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 03:06	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 03:06	1
Vinyl chloride	**0.52**	**I**	1.0	0.50	ug/L			03/23/23 03:06	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 03:06*	*1*
Dibromofluoromethane	*111*		*75 - 126*		*03/23/23 03:06*	*1*
4-Bromofluorobenzene	*91*		*72 - 119*		*03/23/23 03:06*	*1*

Client Sample ID: POL-MW0031S-010.0-20230309

Lab Sample ID: 670-16084-9

Date Collected: 03/09/23 14:20

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 03:31	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 03:31	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0031S-010.0-20230309
Date Collected: 03/09/23 14:20
Date Received: 03/10/23 16:53

Lab Sample ID: 670-16084-9
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 03:31	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 03:31	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 03:31	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 03:31	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 03:31	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 03:31	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 03:31	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 03:31	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 03:31	1
Acetone	**10**	**I**	25	10	ug/L			03/23/23 03:31	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 03:31	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 03:31	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 03:31	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 03:31	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 03:31	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 03:31	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 03:31	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 03:31	1
cis-1,2-Dichloroethene	**0.71**	**I**	1.0	0.20	ug/L			03/23/23 03:31	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 03:31	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 03:31	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 03:31	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 03:31	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 03:31	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 03:31	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 03:31	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 03:31	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 03:31	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 03:31	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 03:31	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 03:31	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 03:31	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 03:31	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 03:31	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 03:31	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 03:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*100*		*64 - 132*		*03/23/23 03:31*	*1*
Dibromofluoromethane	*116*		*75 - 126*		*03/23/23 03:31*	*1*

Client Sample ID: POL-MW0031S-010.0-20230309

Lab Sample ID: 670-16084-9

Date Collected: 03/09/23 14:20

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		72 - 119		03/23/23 03:31	1

Client Sample ID: POL-MW0026I-027.5-20230309

Lab Sample ID: 670-16084-10

Date Collected: 03/09/23 15:00

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 13:33	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 13:33	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 13:33	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 13:33	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 13:33	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 13:33	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 13:33	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 13:33	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 13:33	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 13:33	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 13:33	1
Acetone	10	U	25	10	ug/L			03/23/23 13:33	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 13:33	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 13:33	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 13:33	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 13:33	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 13:33	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 13:33	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 13:33	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 13:33	1
cis-1,2-Dichloroethene	**2.1**		1.0	0.20	ug/L			03/23/23 13:33	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 13:33	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 13:33	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 13:33	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 13:33	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 13:33	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 13:33	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 13:33	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 13:33	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 13:33	1

Client Sample ID: POL-MW0026I-027.5-20230309

Lab Sample ID: 670-16084-10

Date Collected: 03/09/23 15:00

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 13:33	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 13:33	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 13:33	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 13:33	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 13:33	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 13:33	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 13:33	1
Vinyl chloride	**0.56**	**I**	1.0	0.50	ug/L			03/23/23 13:33	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 13:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*64 - 132*		*03/23/23 13:33*	*1*
Dibromofluoromethane	*107*		*75 - 126*		*03/23/23 13:33*	*1*
4-Bromofluorobenzene	*94*		*72 - 119*		*03/23/23 13:33*	*1*

Client Sample ID: POL-MW0035SI-020.5-20230309

Lab Sample ID: 670-16084-11

Date Collected: 03/09/23 15:15

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 13:58	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 13:58	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 13:58	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 13:58	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 13:58	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 13:58	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 13:58	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 13:58	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 13:58	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 13:58	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 13:58	1
Acetone	10	U	25	10	ug/L			03/23/23 13:58	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 13:58	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 13:58	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 13:58	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 13:58	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 13:58	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 13:58	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 13:58	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 13:58	1
cis-1,2-Dichloroethene	**1.7**		1.0	0.20	ug/L			03/23/23 13:58	1

Client Sample ID: POL-MW0035SI-020.5-20230309
Lab Sample ID: 670-16084-11

Date Collected: 03/09/23 15:15
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 13:58	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 13:58	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 13:58	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 13:58	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 13:58	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 13:58	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 13:58	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 13:58	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 13:58	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 13:58	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 13:58	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 13:58	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 13:58	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 13:58	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 13:58	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 13:58	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 13:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*64 - 132*		*03/23/23 13:58*	*1*
Dibromofluoromethane	*111*		*75 - 126*		*03/23/23 13:58*	*1*
4-Bromofluorobenzene	*96*		*72 - 119*		*03/23/23 13:58*	*1*

Client Sample ID: POL-MW0026S-014.8-20230309
Lab Sample ID: 670-16084-12

Date Collected: 03/09/23 16:35
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.36	U	2.0	0.36	ug/L			03/23/23 14:48	2
1,1,2,2-Tetrachloroethane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,1,2-Trichloroethane	0.42	U	10	0.42	ug/L			03/23/23 14:48	2
1,1-Dichloroethane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,1-Dichloroethene	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,2,4-Trichlorobenzene	1.6	U	2.0	1.6	ug/L			03/23/23 14:48	2
1,2-Dibromo-3-Chloropropane	3.0	U	10	3.0	ug/L			03/23/23 14:48	2
1,2-Dibromoethane (EDB)	0.46	U	2.0	0.46	ug/L			03/23/23 14:48	2
1,2-Dichlorobenzene	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,2-Dichloroethane	0.38	U	2.0	0.38	ug/L			03/23/23 14:48	2
1,2-Dichloropropane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
1,3-Dichlorobenzene	1.1	U	2.0	1.1	ug/L			03/23/23 14:48	2
1,4-Dichlorobenzene	1.3	U	2.0	1.3	ug/L			03/23/23 14:48	2
2-Butanone (MEK)	5.2	U	50	5.2	ug/L			03/23/23 14:48	2
2-Hexanone	2.8	U	50	2.8	ug/L			03/23/23 14:48	2
4-Methyl-2-pentanone	3.6	U	50	3.6	ug/L			03/23/23 14:48	2

Client Sample ID: POL-MW0026S-014.8-20230309

Lab Sample ID: 670-16084-12

Date Collected: 03/09/23 16:35

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**28**	**I**	50	20	ug/L			03/23/23 14:48	2
Benzene	0.26	U	2.0	0.26	ug/L			03/23/23 14:48	2
Bromodichloromethane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Bromoform	0.50	U	10	0.50	ug/L			03/23/23 14:48	2
Bromomethane	2.0	U	2.0	2.0	ug/L			03/23/23 14:48	2
Carbon disulfide	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Carbon tetrachloride	0.38	U	2.0	0.38	ug/L			03/23/23 14:48	2
Chlorobenzene	0.30	U	2.0	0.30	ug/L			03/23/23 14:48	2
Chloroethane	1.5	U	2.0	1.5	ug/L			03/23/23 14:48	2
Chloroform	2.0	U	2.0	2.0	ug/L			03/23/23 14:48	2
Chloromethane	0.64	U	2.0	0.64	ug/L			03/23/23 14:48	2
cis-1,2-Dichloroethene	**110**		2.0	0.40	ug/L			03/23/23 14:48	2
cis-1,3-Dichloropropene	1.0	U	10	1.0	ug/L			03/23/23 14:48	2
Cyclohexane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Dibromochloromethane	0.48	U	2.0	0.48	ug/L			03/23/23 14:48	2
Dichlorodifluoromethane	1.7	U	2.0	1.7	ug/L			03/23/23 14:48	2
Ethylbenzene	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Isopropylbenzene	1.1	U	2.0	1.1	ug/L			03/23/23 14:48	2
m,p-Xylenes	1.3	U	10	1.3	ug/L			03/23/23 14:48	2
Methyl acetate	1.2	U	10	1.2	ug/L			03/23/23 14:48	2
Methyl tert-butyl ether	0.44	U	2.0	0.44	ug/L			03/23/23 14:48	2
Methylcyclohexane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Methylene Chloride	6.0	U	10	6.0	ug/L			03/23/23 14:48	2
o-Xylene	1.2	U	10	1.2	ug/L			03/23/23 14:48	2
Styrene	2.0	U	2.0	2.0	ug/L			03/23/23 14:48	2
Tetrachloroethene	1.8	U	2.0	1.8	ug/L			03/23/23 14:48	2
Toluene	0.82	U	2.0	0.82	ug/L			03/23/23 14:48	2
trans-1,2-Dichloroethene	**5.5**		2.0	1.0	ug/L			03/23/23 14:48	2
trans-1,3-Dichloropropene	0.40	U	10	0.40	ug/L			03/23/23 14:48	2
Trichloroethene	**1.3**	**I**	2.0	0.30	ug/L			03/23/23 14:48	2
Trichlorofluoromethane	1.0	U	2.0	1.0	ug/L			03/23/23 14:48	2
Vinyl chloride	**14**		2.0	1.0	ug/L			03/23/23 14:48	2
Xylenes, Total	3.2	U	20	3.2	ug/L			03/23/23 14:48	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*105*		*64 - 132*		*03/23/23 14:48*	*2*
Dibromofluoromethane	*108*		*75 - 126*		*03/23/23 14:48*	*2*
4-Bromofluorobenzene	*93*		*72 - 119*		*03/23/23 14:48*	*2*

Client Sample ID: POL-MW0028S-010.0-20230309

Lab Sample ID: 670-16084-13

Date Collected: 03/09/23 16:45

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 14:23	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 14:23	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1

Client Sample ID: POL-MW0028S-010.0-20230309
Date Collected: 03/09/23 16:45
Date Received: 03/10/23 16:53

Lab Sample ID: 670-16084-13
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 14:23	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 14:23	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 14:23	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 14:23	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 14:23	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 14:23	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 14:23	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 14:23	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 14:23	1
Acetone	10	U	25	10	ug/L			03/23/23 14:23	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 14:23	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 14:23	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 14:23	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 14:23	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 14:23	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 14:23	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 14:23	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 14:23	1
cis-1,2-Dichloroethene	**0.33**	**I**	1.0	0.20	ug/L			03/23/23 14:23	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 14:23	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 14:23	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 14:23	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 14:23	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 14:23	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 14:23	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 14:23	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 14:23	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 14:23	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 14:23	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 14:23	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 14:23	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 14:23	1
Trichloroethene	**0.27**	**I**	1.0	0.15	ug/L			03/23/23 14:23	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 14:23	1
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 14:23	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 14:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*64 - 132*		*03/23/23 14:23*	*1*
Dibromofluoromethane	*112*		*75 - 126*		*03/23/23 14:23*	*1*
4-Bromofluorobenzene	*93*		*72 - 119*		*03/23/23 14:23*	*1*

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0028I-027.5-20230310
Date Collected: 03/10/23 09:05
Date Received: 03/10/23 16:53

Lab Sample ID: 670-16084-14
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 17:17	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 17:17	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 17:17	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 17:17	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 17:17	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 17:17	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 17:17	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 17:17	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 17:17	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 17:17	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 17:17	1
Acetone	10	U	25	10	ug/L			03/23/23 17:17	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 17:17	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 17:17	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 17:17	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 17:17	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 17:17	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 17:17	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 17:17	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 17:17	1
cis-1,2-Dichloroethene	**0.32**	**I**	1.0	0.20	ug/L			03/23/23 17:17	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 17:17	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 17:17	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 17:17	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 17:17	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 17:17	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 17:17	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 17:17	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 17:17	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 17:17	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 17:17	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 17:17	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 17:17	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 17:17	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 17:17	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 17:17	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 17:17	1
Vinyl chloride	**0.64**	**I**	1.0	0.50	ug/L			03/23/23 17:17	1

Client Sample ID: POL-MW0028I-027.5-20230310

Lab Sample ID: 670-16084-14

Date Collected: 03/10/23 09:05

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 17:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*64 - 132*		*03/23/23 17:17*	*1*
Dibromofluoromethane	*107*		*75 - 126*		*03/23/23 17:17*	*1*
4-Bromofluorobenzene	*94*		*72 - 119*		*03/23/23 17:17*	*1*

Client Sample ID: POL-MW0034S-010.0-20230310

Lab Sample ID: 670-16084-15

Date Collected: 03/10/23 09:50

Matrix: Water

Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.90	U	5.0	0.90	ug/L			03/24/23 15:51	5
1,1,2,2-Tetrachloroethane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,1,2-Trichloro-1,2,2-trifluoroethane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,1,2-Trichloroethane	1.1	U	25	1.1	ug/L			03/24/23 15:51	5
1,1-Dichloroethane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,1-Dichloroethene	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,2,4-Trichlorobenzene	4.1	U	5.0	4.1	ug/L			03/24/23 15:51	5
1,2-Dibromo-3-Chloropropane	7.5	U	25	7.5	ug/L			03/24/23 15:51	5
1,2-Dibromoethane (EDB)	1.2	U	5.0	1.2	ug/L			03/24/23 15:51	5
1,2-Dichlorobenzene	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,2-Dichloroethane	0.95	U	5.0	0.95	ug/L			03/24/23 15:51	5
1,2-Dichloropropane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
1,3-Dichlorobenzene	2.7	U	5.0	2.7	ug/L			03/24/23 15:51	5
1,4-Dichlorobenzene	3.2	U	5.0	3.2	ug/L			03/24/23 15:51	5
2-Butanone (MEK)	13	U	130	13	ug/L			03/24/23 15:51	5
2-Hexanone	7.0	U	130	7.0	ug/L			03/24/23 15:51	5
4-Methyl-2-pentanone	9.0	U	130	9.0	ug/L			03/24/23 15:51	5
Acetone	50	U	130	50	ug/L			03/24/23 15:51	5
Benzene	0.65	U	5.0	0.65	ug/L			03/24/23 15:51	5
Bromodichloromethane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Bromoform	1.3	U	25	1.3	ug/L			03/24/23 15:51	5
Bromomethane	4.9	U	5.0	4.9	ug/L			03/24/23 15:51	5
Carbon disulfide	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Carbon tetrachloride	0.95	U	5.0	0.95	ug/L			03/24/23 15:51	5
Chlorobenzene	0.75	U	5.0	0.75	ug/L			03/24/23 15:51	5
Chloroethane	3.8	U	5.0	3.8	ug/L			03/24/23 15:51	5
Chloroform	5.0	U	5.0	5.0	ug/L			03/24/23 15:51	5
Chloromethane	1.6	U	5.0	1.6	ug/L			03/24/23 15:51	5
cis-1,2-Dichloroethene	**66**		5.0	1.0	ug/L			03/24/23 15:51	5
cis-1,3-Dichloropropene	2.5	U	25	2.5	ug/L			03/24/23 15:51	5
Cyclohexane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Dibromochloromethane	1.2	U	5.0	1.2	ug/L			03/24/23 15:51	5
Dichlorodifluoromethane	4.3	U	5.0	4.3	ug/L			03/24/23 15:51	5
Ethylbenzene	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Isopropylbenzene	2.7	U	5.0	2.7	ug/L			03/24/23 15:51	5
m,p-Xylenes	3.2	U	25	3.2	ug/L			03/24/23 15:51	5
Methyl acetate	3.1	U	25	3.1	ug/L			03/24/23 15:51	5

Client: Tetra Tech, Inc.
Job ID: 670-16084-1
Project/Site: NASA KSC POL

Client Sample ID: POL-MW0034S-010.0-20230310
Lab Sample ID: 670-16084-15
Date Collected: 03/10/23 09:50
Matrix: Water
Date Received: 03/10/23 16:53

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	1.1	U	5.0	1.1	ug/L			03/24/23 15:51	5
Methylcyclohexane	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Methylene Chloride	15	U	25	15	ug/L			03/24/23 15:51	5
o-Xylene	3.0	U	25	3.0	ug/L			03/24/23 15:51	5
Styrene	5.0	U	5.0	5.0	ug/L			03/24/23 15:51	5
Tetrachloroethene	4.5	U	5.0	4.5	ug/L			03/24/23 15:51	5
Toluene	2.1	U	5.0	2.1	ug/L			03/24/23 15:51	5
trans-1,2-Dichloroethene	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
trans-1,3-Dichloropropene	1.0	U	25	1.0	ug/L			03/24/23 15:51	5
Trichloroethene	**540**		5.0	0.75	ug/L			03/24/23 15:51	5
Trichlorofluoromethane	2.6	U	5.0	2.6	ug/L			03/24/23 15:51	5
Vinyl chloride	2.5	U	5.0	2.5	ug/L			03/24/23 15:51	5
Xylenes, Total	8.0	U	50	8.0	ug/L			03/24/23 15:51	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*64 - 132*		*03/24/23 15:51*	*5*
Dibromofluoromethane	*109*		*75 - 126*		*03/24/23 15:51*	*5*
4-Bromofluorobenzene	*95*		*72 - 119*		*03/24/23 15:51*	*5*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		TOL	DBFM	BFB
Lab Sample ID	Client Sample ID	(64-132)	(75-126)	(72-119)
400-234378-A-6 MS	Matrix Spike	102	101	93
400-234378-A-6 MSD	Matrix Spike Duplicate	101	100	93
400-234445-A-1 MS	Matrix Spike	102	101	93
400-234445-A-1 MSD	Matrix Spike Duplicate	102	100	94
400-234457-B-31 MS	Matrix Spike	99	100	94
400-234457-B-31 MSD	Matrix Spike Duplicate	98	101	95
670-16084-1	POL-MW0014I-027.5-20230309	100	111	93
670-16084-2	POL-MW0014ID-034.5-20230309	101	113	91
670-16084-3	POL-MW0022D-042.5-20230309	100	113	92
670-16084-4	POL-MW0014SI-020.5-20230309	100	111	94
670-16084-5	POL-MW0022I-027.5-20230309	101	112	95
670-16084-6	POL-MW0012S-013.5-20230309	101	114	93
670-16084-7	POL-MW0017S-013.5-20230309	100	114	93
670-16084-8	POL-MW0012I-030.5-20230309	100	111	91
670-16084-9	POL-MW0031S-010.0-20230309	100	116	92
670-16084-10	POL-MW0026I-027.5-20230309	105	107	94
670-16084-11	POL-MW0035SI-020.5-20230309	106	111	96
670-16084-12	POL-MW0026S-014.8-20230309	105	108	93
670-16084-13	POL-MW0028S-010.0-20230309	104	112	93
670-16084-14	POL-MW0028I-027.5-20230310	106	107	94
670-16084-15	POL-MW0034S-010.0-20230310	107	109	95
LCS 400-617507/1002	Lab Control Sample	99	108	97
LCS 400-617716/1002	Lab Control Sample	100	102	93
LCS 400-617882/1002	Lab Control Sample	99	109	93
MB 400-617507/4	Method Blank	103	102	100
MB 400-617716/4	Method Blank	107	104	96
MB 400-617882/4	Method Blank	106	105	97

Surrogate Legend

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane

BFB = 4-Bromofluorobenzene

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 400-617507/4
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/22/23 18:01	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/22/23 18:01	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/22/23 18:01	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/22/23 18:01	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/22/23 18:01	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/22/23 18:01	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/22/23 18:01	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/22/23 18:01	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/22/23 18:01	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/22/23 18:01	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/22/23 18:01	1
Acetone	10	U	25	10	ug/L			03/22/23 18:01	1
Benzene	0.13	U	1.0	0.13	ug/L			03/22/23 18:01	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/22/23 18:01	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/22/23 18:01	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/22/23 18:01	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/22/23 18:01	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/22/23 18:01	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/22/23 18:01	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/22/23 18:01	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/22/23 18:01	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/22/23 18:01	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/22/23 18:01	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/22/23 18:01	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/22/23 18:01	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/22/23 18:01	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/22/23 18:01	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/22/23 18:01	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/22/23 18:01	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/22/23 18:01	1
Styrene	1.0	U	1.0	1.0	ug/L			03/22/23 18:01	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/22/23 18:01	1
Toluene	0.41	U	1.0	0.41	ug/L			03/22/23 18:01	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/22/23 18:01	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/22/23 18:01	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/22/23 18:01	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 400-617507/4
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/22/23 18:01	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/22/23 18:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*64 - 132*		*03/22/23 18:01*	*1*
Dibromofluoromethane	*102*		*75 - 126*		*03/22/23 18:01*	*1*
4-Bromofluorobenzene	*100*		*72 - 119*		*03/22/23 18:01*	*1*

Lab Sample ID: LCS 400-617507/1002
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	53.2		ug/L		106	68 - 130
1,1,2,2-Tetrachloroethane	50.0	49.6		ug/L		99	70 - 131
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	53.2		ug/L		106	60 - 139
1,1,2-Trichloroethane	50.0	50.6		ug/L		101	70 - 130
1,1-Dichloroethane	50.0	54.9		ug/L		110	70 - 130
1,1-Dichloroethene	50.0	53.2		ug/L		106	63 - 134
1,2,4-Trichlorobenzene	50.0	56.0		ug/L		112	60 - 140
1,2-Dibromo-3-Chloropropane	50.0	49.8		ug/L		100	54 - 135
1,2-Dibromoethane (EDB)	50.0	50.6		ug/L		101	70 - 130
1,2-Dichlorobenzene	50.0	55.1		ug/L		110	67 - 130
1,2-Dichloroethane	50.0	59.9		ug/L		120	69 - 130
1,2-Dichloropropane	50.0	54.6		ug/L		109	70 - 130
1,3-Dichlorobenzene	50.0	53.6		ug/L		107	70 - 130
1,4-Dichlorobenzene	50.0	54.1		ug/L		108	70 - 130
2-Butanone (MEK)	200	212		ug/L		106	61 - 145
2-Hexanone	200	259		ug/L		130	65 - 137
4-Methyl-2-pentanone	200	263		ug/L		132	69 - 138
Acetone	200	312		ug/L		156	43 - 160
Benzene	50.0	50.0		ug/L		100	70 - 130
Bromodichloromethane	50.0	53.0		ug/L		106	67 - 133
Bromoform	50.0	47.9		ug/L		96	57 - 140
Bromomethane	50.0	50.2		ug/L		100	10 - 160
Carbon disulfide	50.0	51.5		ug/L		103	61 - 137
Carbon tetrachloride	50.0	53.9		ug/L		108	61 - 137
Chlorobenzene	50.0	51.3		ug/L		103	70 - 130
Chloroethane	50.0	45.6		ug/L		91	55 - 141
Chloroform	50.0	53.5		ug/L		107	69 - 130
Chloromethane	50.0	42.6		ug/L		85	58 - 137
cis-1,2-Dichloroethene	50.0	56.3		ug/L		113	68 - 130
cis-1,3-Dichloropropene	50.0	49.9		ug/L		100	69 - 132
Cyclohexane	50.0	49.6		ug/L		99	70 - 130
Dibromochloromethane	50.0	50.7		ug/L		101	67 - 135
Dichlorodifluoromethane	50.0	29.5		ug/L		59	41 - 146
Ethylbenzene	50.0	53.3		ug/L		107	70 - 130
Isopropylbenzene	50.0	54.4		ug/L		109	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 400-617507/1002
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	50.0	53.2		ug/L		106	70 - 130
Methyl acetate	100	131		ug/L		131	45 - 159
Methyl tert-butyl ether	50.0	50.6		ug/L		101	66 - 130
Methylcyclohexane	50.0	51.7		ug/L		103	70 - 130
Methylene Chloride	50.0	52.1		ug/L		104	66 - 135
o-Xylene	50.0	52.8		ug/L		106	70 - 130
Styrene	50.0	52.1		ug/L		104	70 - 130
Tetrachloroethene	50.0	54.2		ug/L		108	65 - 130
Toluene	50.0	49.8		ug/L		100	70 - 130
trans-1,2-Dichloroethene	50.0	51.6		ug/L		103	70 - 130
trans-1,3-Dichloropropene	50.0	49.9		ug/L		100	63 - 130
Trichloroethene	50.0	51.6		ug/L		103	70 - 130
Trichlorofluoromethane	50.0	48.4		ug/L		97	65 - 138
Vinyl chloride	50.0	43.5		ug/L		87	59 - 136
Xylenes, Total	100	106		ug/L		106	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*64 - 132*
Dibromofluoromethane	*108*		*75 - 126*
4-Bromofluorobenzene	*97*		*72 - 119*

Lab Sample ID: 400-234457-B-31 MS
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.18	U	50.0	54.3		ug/L		109	57 - 142
1,1,2,2-Tetrachloroethane	0.50	U	50.0	53.9		ug/L		108	66 - 135
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	50.6		ug/L		101	55 - 150
1,1,2-Trichloroethane	0.21	U	50.0	57.8		ug/L		116	66 - 131
1,1-Dichloroethane	0.50	U	50.0	56.1		ug/L		112	61 - 144
1,1-Dichloroethene	0.50	U	50.0	50.9		ug/L		102	54 - 147
1,2,4-Trichlorobenzene	0.82	U	50.0	58.2		ug/L		116	39 - 148
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	51.2		ug/L		102	45 - 135
1,2-Dibromoethane (EDB)	0.23	U	50.0	56.2		ug/L		112	64 - 132
1,2-Dichlorobenzene	0.50	U	50.0	60.9		ug/L		122	52 - 137
1,2-Dichloroethane	0.19	U	50.0	62.3		ug/L		125	60 - 141
1,2-Dichloropropane	0.50	U	50.0	57.9		ug/L		116	66 - 137
1,3-Dichlorobenzene	0.54	U	50.0	58.2		ug/L		116	54 - 135
1,4-Dichlorobenzene	0.64	U	50.0	59.3		ug/L		119	53 - 135
2-Butanone (MEK)	2.6	U	200	210		ug/L		105	55 - 150
2-Hexanone	1.4	U J3	200	281	J3	ug/L		141	65 - 140
4-Methyl-2-pentanone	1.8	U	200	272		ug/L		136	63 - 146
Acetone	10	U	200	273		ug/L		136	43 - 150
Benzene	0.38	I	50.0	55.3		ug/L		110	56 - 142
Bromodichloromethane	0.50	U	50.0	55.9		ug/L		112	59 - 143
Bromoform	0.25	U	50.0	52.0		ug/L		104	50 - 140
Bromomethane	0.98	U	50.0	55.1		ug/L		110	10 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234457-B-31 MS
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	0.50	U	50.0	49.8		ug/L		100	48 - 150
Carbon tetrachloride	0.19	U	50.0	55.3		ug/L		111	55 - 145
Chlorobenzene	0.15	U	50.0	57.6		ug/L		115	64 - 130
Chloroethane	0.76	U	50.0	44.2		ug/L		88	50 - 150
Chloroform	1.0	U	50.0	55.9		ug/L		112	60 - 141
Chloromethane	0.32	U	50.0	45.3		ug/L		91	49 - 148
cis-1,2-Dichloroethene	14		50.0	70.2		ug/L		112	59 - 143
cis-1,3-Dichloropropene	0.50	U	50.0	50.8		ug/L		102	57 - 140
Cyclohexane	0.50	U	50.0	50.4		ug/L		101	58 - 141
Dibromochloromethane	0.24	U	50.0	56.8		ug/L		114	56 - 143
Dichlorodifluoromethane	0.85	U	50.0	30.5		ug/L		61	16 - 150
Ethylbenzene	0.50	U	50.0	58.3		ug/L		117	58 - 131
Isopropylbenzene	0.53	U	50.0	59.1		ug/L		118	56 - 133
m,p-Xylenes	0.63	U	50.0	58.5		ug/L		117	57 - 130
Methyl acetate	0.61	U	100	136		ug/L		136	21 - 150
Methyl tert-butyl ether	0.22	U	50.0	51.7		ug/L		103	59 - 137
Methylcyclohexane	0.50	U	50.0	52.3		ug/L		105	62 - 141
Methylene Chloride	3.0	U	50.0	50.3		ug/L		101	60 - 146
o-Xylene	0.60	U	50.0	58.0		ug/L		116	61 - 130
Styrene	1.0	U	50.0	57.6		ug/L		115	58 - 131
Tetrachloroethene	0.90	U	50.0	56.3		ug/L		113	52 - 133
Toluene	0.41	U	50.0	55.3		ug/L		111	65 - 130
trans-1,2-Dichloroethene	0.50	U	50.0	51.9		ug/L		104	61 - 143
trans-1,3-Dichloropropene	0.20	U	50.0	55.2		ug/L		110	53 - 133
Trichloroethene	9.3		50.0	61.5		ug/L		104	64 - 136
Trichlorofluoromethane	0.52	U	50.0	48.4		ug/L		97	54 - 150
Vinyl chloride	0.50	U	50.0	41.6		ug/L		83	46 - 150
Xylenes, Total	1.6	U	100	117		ug/L		117	59 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*64 - 132*
Dibromofluoromethane	*100*		*75 - 126*
4-Bromofluorobenzene	*94*		*72 - 119*

Lab Sample ID: 400-234457-B-31 MSD
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.18	U	50.0	53.5		ug/L		107	57 - 142	1	30
1,1,2,2-Tetrachloroethane	0.50	U	50.0	54.4		ug/L		109	66 - 135	1	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	52.4		ug/L		105	55 - 150	3	30
1,1,2-Trichloroethane	0.21	U	50.0	55.7		ug/L		111	66 - 131	4	30
1,1-Dichloroethane	0.50	U	50.0	56.2		ug/L		112	61 - 144	0	30
1,1-Dichloroethene	0.50	U	50.0	53.5		ug/L		107	54 - 147	5	30
1,2,4-Trichlorobenzene	0.82	U	50.0	54.7		ug/L		109	39 - 148	6	30
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	51.2		ug/L		102	45 - 135	0	30
1,2-Dibromoethane (EDB)	0.23	U	50.0	55.4		ug/L		111	64 - 132	1	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234457-B-31 MSD
Matrix: Water
Analysis Batch: 617507

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	0.50	U	50.0	57.3		ug/L		115	52 - 137	6	30
1,2-Dichloroethane	0.19	U	50.0	61.0		ug/L		122	60 - 141	2	30
1,2-Dichloropropane	0.50	U	50.0	56.7		ug/L		113	66 - 137	2	30
1,3-Dichlorobenzene	0.54	U	50.0	54.9		ug/L		110	54 - 135	6	30
1,4-Dichlorobenzene	0.64	U	50.0	55.2		ug/L		110	53 - 135	7	30
2-Butanone (MEK)	2.6	U	200	210		ug/L		105	55 - 150	0	30
2-Hexanone	1.4	U J3	200	279		ug/L		139	65 - 140	1	30
4-Methyl-2-pentanone	1.8	U	200	268		ug/L		134	63 - 146	1	30
Acetone	10	U	200	286		ug/L		143	43 - 150	5	30
Benzene	0.38	I	50.0	54.0		ug/L		107	56 - 142	2	30
Bromodichloromethane	0.50	U	50.0	54.9		ug/L		110	59 - 143	2	30
Bromoform	0.25	U	50.0	51.9		ug/L		104	50 - 140	0	30
Bromomethane	0.98	U	50.0	56.7		ug/L		113	10 - 150	3	50
Carbon disulfide	0.50	U	50.0	50.7		ug/L		101	48 - 150	2	30
Carbon tetrachloride	0.19	U	50.0	55.2		ug/L		110	55 - 145	0	30
Chlorobenzene	0.15	U	50.0	54.6		ug/L		109	64 - 130	5	30
Chloroethane	0.76	U	50.0	48.2		ug/L		96	50 - 150	9	30
Chloroform	1.0	U	50.0	54.7		ug/L		109	60 - 141	2	30
Chloromethane	0.32	U	50.0	49.9		ug/L		100	49 - 148	10	31
cis-1,2-Dichloroethene	14		50.0	69.6		ug/L		111	59 - 143	1	30
cis-1,3-Dichloropropene	0.50	U	50.0	50.8		ug/L		102	57 - 140	0	30
Cyclohexane	0.50	U	50.0	53.5		ug/L		107	58 - 141	6	30
Dibromochloromethane	0.24	U	50.0	56.0		ug/L		112	56 - 143	1	30
Dichlorodifluoromethane	0.85	U	50.0	34.0		ug/L		68	16 - 150	11	31
Ethylbenzene	0.50	U	50.0	55.0		ug/L		110	58 - 131	6	30
Isopropylbenzene	0.53	U	50.0	54.8		ug/L		110	56 - 133	8	30
m,p-Xylenes	0.63	U	50.0	55.6		ug/L		111	57 - 130	5	30
Methyl acetate	0.61	U	100	139		ug/L		139	21 - 150	2	30
Methyl tert-butyl ether	0.22	U	50.0	52.5		ug/L		105	59 - 137	1	30
Methylcyclohexane	0.50	U	50.0	51.6		ug/L		103	62 - 141	1	30
Methylene Chloride	3.0	U	50.0	52.0		ug/L		104	60 - 146	3	32
o-Xylene	0.60	U	50.0	55.1		ug/L		110	61 - 130	5	30
Styrene	1.0	U	50.0	54.9		ug/L		110	58 - 131	5	30
Tetrachloroethene	0.90	U	50.0	53.9		ug/L		108	52 - 133	4	30
Toluene	0.41	U	50.0	52.8		ug/L		106	65 - 130	5	30
trans-1,2-Dichloroethene	0.50	U	50.0	51.5		ug/L		103	61 - 143	1	30
trans-1,3-Dichloropropene	0.20	U	50.0	53.9		ug/L		108	53 - 133	2	30
Trichloroethene	9.3		50.0	60.1		ug/L		102	64 - 136	2	30
Trichlorofluoromethane	0.52	U	50.0	51.3		ug/L		103	54 - 150	6	30
Vinyl chloride	0.50	U	50.0	46.7		ug/L		93	46 - 150	12	30
Xylenes, Total	1.6	U	100	111		ug/L		111	59 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*64 - 132*
Dibromofluoromethane	*101*		*75 - 126*
4-Bromofluorobenzene	*95*		*72 - 119*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 400-617716/4
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/23/23 12:43	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/23/23 12:43	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/23/23 12:43	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/23/23 12:43	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/23/23 12:43	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/23/23 12:43	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/23/23 12:43	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/23/23 12:43	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/23/23 12:43	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/23/23 12:43	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/23/23 12:43	1
Acetone	10	U	25	10	ug/L			03/23/23 12:43	1
Benzene	0.13	U	1.0	0.13	ug/L			03/23/23 12:43	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/23/23 12:43	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/23/23 12:43	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/23/23 12:43	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/23/23 12:43	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/23/23 12:43	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/23/23 12:43	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/23/23 12:43	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/23/23 12:43	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/23/23 12:43	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/23/23 12:43	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/23/23 12:43	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/23/23 12:43	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/23/23 12:43	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/23/23 12:43	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/23/23 12:43	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/23/23 12:43	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/23/23 12:43	1
Styrene	1.0	U	1.0	1.0	ug/L			03/23/23 12:43	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/23/23 12:43	1
Toluene	0.41	U	1.0	0.41	ug/L			03/23/23 12:43	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/23/23 12:43	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/23/23 12:43	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/23/23 12:43	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 400-617716/4
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/23/23 12:43	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/23/23 12:43	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*107*		*64 - 132*		*03/23/23 12:43*	*1*
Dibromofluoromethane	*104*		*75 - 126*		*03/23/23 12:43*	*1*
4-Bromofluorobenzene	*96*		*72 - 119*		*03/23/23 12:43*	*1*

Lab Sample ID: LCS 400-617716/1002
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	49.4		ug/L		99	68 - 130
1,1,2,2-Tetrachloroethane	50.0	49.0		ug/L		98	70 - 131
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.9		ug/L		100	60 - 139
1,1,2-Trichloroethane	50.0	51.1		ug/L		102	70 - 130
1,1-Dichloroethane	50.0	50.3		ug/L		101	70 - 130
1,1-Dichloroethene	50.0	49.9		ug/L		100	63 - 134
1,2,4-Trichlorobenzene	50.0	53.5		ug/L		107	60 - 140
1,2-Dibromo-3-Chloropropane	50.0	48.0		ug/L		96	54 - 135
1,2-Dibromoethane (EDB)	50.0	49.5		ug/L		99	70 - 130
1,2-Dichlorobenzene	50.0	55.7		ug/L		111	67 - 130
1,2-Dichloroethane	50.0	55.1		ug/L		110	69 - 130
1,2-Dichloropropane	50.0	49.7		ug/L		99	70 - 130
1,3-Dichlorobenzene	50.0	54.0		ug/L		108	70 - 130
1,4-Dichlorobenzene	50.0	55.0		ug/L		110	70 - 130
2-Butanone (MEK)	200	185		ug/L		93	61 - 145
2-Hexanone	200	251		ug/L		126	65 - 137
4-Methyl-2-pentanone	200	228		ug/L		114	69 - 138
Acetone	200	282		ug/L		141	43 - 160
Benzene	50.0	45.9		ug/L		92	70 - 130
Bromodichloromethane	50.0	47.6		ug/L		95	67 - 133
Bromoform	50.0	47.5		ug/L		95	57 - 140
Bromomethane	50.0	61.3		ug/L		123	10 - 160
Carbon disulfide	50.0	47.5		ug/L		95	61 - 137
Carbon tetrachloride	50.0	50.4		ug/L		101	61 - 137
Chlorobenzene	50.0	52.2		ug/L		104	70 - 130
Chloroethane	50.0	51.0		ug/L		102	55 - 141
Chloroform	50.0	49.1		ug/L		98	69 - 130
Chloromethane	50.0	55.1		ug/L		110	58 - 137
cis-1,2-Dichloroethene	50.0	51.6		ug/L		103	68 - 130
cis-1,3-Dichloropropene	50.0	43.7		ug/L		87	69 - 132
Cyclohexane	50.0	45.1		ug/L		90	70 - 130
Dibromochloromethane	50.0	51.0		ug/L		102	67 - 135
Dichlorodifluoromethane	50.0	48.9		ug/L		98	41 - 146
Ethylbenzene	50.0	53.3		ug/L		107	70 - 130
Isopropylbenzene	50.0	54.4		ug/L		109	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 400-617716/1002
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	50.0	53.9		ug/L		108	70 - 130
Methyl acetate	100	119		ug/L		119	45 - 159
Methyl tert-butyl ether	50.0	45.1		ug/L		90	66 - 130
Methylcyclohexane	50.0	45.3		ug/L		91	70 - 130
Methylene Chloride	50.0	48.3		ug/L		97	66 - 135
o-Xylene	50.0	52.8		ug/L		106	70 - 130
Styrene	50.0	52.2		ug/L		104	70 - 130
Tetrachloroethene	50.0	56.2		ug/L		112	65 - 130
Toluene	50.0	50.4		ug/L		101	70 - 130
trans-1,2-Dichloroethene	50.0	47.5		ug/L		95	70 - 130
trans-1,3-Dichloropropene	50.0	49.0		ug/L		98	63 - 130
Trichloroethene	50.0	46.8		ug/L		94	70 - 130
Trichlorofluoromethane	50.0	51.9		ug/L		104	65 - 138
Vinyl chloride	50.0	49.4		ug/L		99	59 - 136
Xylenes, Total	100	107		ug/L		107	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*64 - 132*
Dibromofluoromethane	*102*		*75 - 126*
4-Bromofluorobenzene	*93*		*72 - 119*

Lab Sample ID: 400-234378-A-6 MS
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.18	U	50.0	41.9		ug/L		84	57 - 142
1,1,2,2-Tetrachloroethane	0.50	U	50.0	43.8		ug/L		88	66 - 135
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	41.4		ug/L		83	55 - 150
1,1,2-Trichloroethane	0.21	U	50.0	46.4		ug/L		93	66 - 131
1,1-Dichloroethane	0.50	U	50.0	45.0		ug/L		90	61 - 144
1,1-Dichloroethene	0.50	U	50.0	39.9		ug/L		80	54 - 147
1,2,4-Trichlorobenzene	0.82	U	50.0	32.3		ug/L		65	39 - 148
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	39.5		ug/L		79	45 - 135
1,2-Dibromoethane (EDB)	0.23	U	50.0	44.3		ug/L		89	64 - 132
1,2-Dichlorobenzene	0.50	U	50.0	40.1		ug/L		80	52 - 137
1,2-Dichloroethane	0.19	U	50.0	48.5		ug/L		97	60 - 141
1,2-Dichloropropane	0.50	U	50.0	44.5		ug/L		89	66 - 137
1,3-Dichlorobenzene	0.54	U	50.0	35.8		ug/L		72	54 - 135
1,4-Dichlorobenzene	0.64	U	50.0	36.8		ug/L		74	53 - 135
2-Butanone (MEK)	2.6	U	200	160		ug/L		80	55 - 150
2-Hexanone	1.4	U	200	222		ug/L		111	65 - 140
4-Methyl-2-pentanone	1.8	U	200	204		ug/L		102	63 - 146
Acetone	10	U	200	228		ug/L		114	43 - 150
Benzene	0.13	U	50.0	41.0		ug/L		82	56 - 142
Bromodichloromethane	0.50	U	50.0	42.8		ug/L		86	59 - 143
Bromoform	0.25	U	50.0	41.7		ug/L		83	50 - 140
Bromomethane	0.98	U	50.0	55.2		ug/L		110	10 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234378-A-6 MS
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	0.50	U	50.0	38.3		ug/L		77	48 - 150
Carbon tetrachloride	0.19	U	50.0	42.5		ug/L		85	55 - 145
Chlorobenzene	0.15	U	50.0	40.2		ug/L		80	64 - 130
Chloroethane	0.76	U	50.0	47.9		ug/L		96	50 - 150
Chloroform	1.0	U	50.0	44.1		ug/L		88	60 - 141
Chloromethane	0.32	U	50.0	49.2		ug/L		98	49 - 148
cis-1,2-Dichloroethene	0.20	U	50.0	45.1		ug/L		90	59 - 143
cis-1,3-Dichloropropene	0.50	U	50.0	35.5		ug/L		71	57 - 140
Cyclohexane	0.50	U	50.0	36.6		ug/L		73	58 - 141
Dibromochloromethane	0.24	U	50.0	45.7		ug/L		91	56 - 143
Dichlorodifluoromethane	0.85	U	50.0	43.8		ug/L		88	16 - 150
Ethylbenzene	0.50	U	50.0	36.4		ug/L		73	58 - 131
Isopropylbenzene	0.53	U	50.0	32.4		ug/L		65	56 - 133
m,p-Xylenes	0.63	U	50.0	35.9		ug/L		72	57 - 130
Methyl acetate	0.61	U	100	110		ug/L		110	21 - 150
Methyl tert-butyl ether	0.22	U	50.0	39.8		ug/L		80	59 - 137
Methylcyclohexane	0.50	U	50.0	35.6		ug/L		71	62 - 141
Methylene Chloride	3.0	U	50.0	41.3		ug/L		83	60 - 146
o-Xylene	0.60	U	50.0	36.8		ug/L		74	61 - 130
Styrene	1.0	U	50.0	37.6		ug/L		75	58 - 131
Tetrachloroethene	0.90	U	50.0	38.6		ug/L		77	52 - 133
Toluene	0.41	U	50.0	40.0		ug/L		80	65 - 130
trans-1,2-Dichloroethene	0.50	U	50.0	39.6		ug/L		79	61 - 143
trans-1,3-Dichloropropene	0.20	U	50.0	42.0		ug/L		84	53 - 133
Trichloroethene	0.15	U	50.0	38.0		ug/L		76	64 - 136
Trichlorofluoromethane	0.52	U	50.0	49.1		ug/L		98	54 - 150
Vinyl chloride	0.50	U	50.0	43.8		ug/L		88	46 - 150
Xylenes, Total	1.6	U	100	72.7		ug/L		73	59 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*64 - 132*
Dibromofluoromethane	*101*		*75 - 126*
4-Bromofluorobenzene	*93*		*72 - 119*

Lab Sample ID: 400-234378-A-6 MSD
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.18	U	50.0	47.8		ug/L		96	57 - 142	13	30
1,1,2,2-Tetrachloroethane	0.50	U	50.0	50.9		ug/L		102	66 - 135	15	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	48.0		ug/L		96	55 - 150	15	30
1,1,2-Trichloroethane	0.21	U	50.0	52.6		ug/L		105	66 - 131	12	30
1,1-Dichloroethane	0.50	U	50.0	50.9		ug/L		102	61 - 144	12	30
1,1-Dichloroethene	0.50	U	50.0	46.3		ug/L		93	54 - 147	15	30
1,2,4-Trichlorobenzene	0.82	U	50.0	41.1		ug/L		82	39 - 148	24	30
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	46.7		ug/L		93	45 - 135	17	30
1,2-Dibromoethane (EDB)	0.23	U	50.0	51.2		ug/L		102	64 - 132	15	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234378-A-6 MSD
Matrix: Water
Analysis Batch: 617716

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	0.50	U	50.0	47.7		ug/L		95	52 - 137	17	30
1,2-Dichloroethane	0.19	U	50.0	55.5		ug/L		111	60 - 141	13	30
1,2-Dichloropropane	0.50	U	50.0	50.0		ug/L		100	66 - 137	12	30
1,3-Dichlorobenzene	0.54	U	50.0	42.9		ug/L		86	54 - 135	18	30
1,4-Dichlorobenzene	0.64	U	50.0	43.5		ug/L		87	53 - 135	17	30
2-Butanone (MEK)	2.6	U	200	183		ug/L		92	55 - 150	13	30
2-Hexanone	1.4	U	200	253		ug/L		126	65 - 140	13	30
4-Methyl-2-pentanone	1.8	U	200	234		ug/L		117	63 - 146	14	30
Acetone	10	U	200	260		ug/L		130	43 - 150	13	30
Benzene	0.13	U	50.0	46.5		ug/L		93	56 - 142	12	30
Bromodichloromethane	0.50	U	50.0	48.6		ug/L		97	59 - 143	13	30
Bromoform	0.25	U	50.0	49.0		ug/L		98	50 - 140	16	30
Bromomethane	0.98	U	50.0	61.1		ug/L		122	10 - 150	10	50
Carbon disulfide	0.50	U	50.0	43.9		ug/L		88	48 - 150	14	30
Carbon tetrachloride	0.19	U	50.0	47.7		ug/L		95	55 - 145	12	30
Chlorobenzene	0.15	U	50.0	46.0		ug/L		92	64 - 130	13	30
Chloroethane	0.76	U	50.0	48.7		ug/L		97	50 - 150	2	30
Chloroform	1.0	U	50.0	49.7		ug/L		99	60 - 141	12	30
Chloromethane	0.32	U	50.0	53.9		ug/L		108	49 - 148	9	31
cis-1,2-Dichloroethene	0.20	U	50.0	51.1		ug/L		102	59 - 143	13	30
cis-1,3-Dichloropropene	0.50	U	50.0	41.6		ug/L		83	57 - 140	16	30
Cyclohexane	0.50	U	50.0	42.1		ug/L		84	58 - 141	14	30
Dibromochloromethane	0.24	U	50.0	52.6		ug/L		105	56 - 143	14	30
Dichlorodifluoromethane	0.85	U	50.0	46.5		ug/L		93	16 - 150	6	31
Ethylbenzene	0.50	U	50.0	43.6		ug/L		87	58 - 131	18	30
Isopropylbenzene	0.53	U	50.0	40.5		ug/L		81	56 - 133	22	30
m,p-Xylenes	0.63	U	50.0	43.3		ug/L		87	57 - 130	19	30
Methyl acetate	0.61	U	100	123		ug/L		123	21 - 150	11	30
Methyl tert-butyl ether	0.22	U	50.0	46.7		ug/L		93	59 - 137	16	30
Methylcyclohexane	0.50	U	50.0	42.1		ug/L		84	62 - 141	17	30
Methylene Chloride	3.0	U	50.0	47.5		ug/L		95	60 - 146	14	32
o-Xylene	0.60	U	50.0	44.0		ug/L		88	61 - 130	18	30
Styrene	1.0	U	50.0	44.3		ug/L		89	58 - 131	16	30
Tetrachloroethene	0.90	U	50.0	45.8		ug/L		92	52 - 133	17	30
Toluene	0.41	U	50.0	46.1		ug/L		92	65 - 130	14	30
trans-1,2-Dichloroethene	0.50	U	50.0	45.5		ug/L		91	61 - 143	14	30
trans-1,3-Dichloropropene	0.20	U	50.0	48.2		ug/L		96	53 - 133	14	30
Trichloroethene	0.15	U	50.0	43.2		ug/L		86	64 - 136	13	30
Trichlorofluoromethane	0.52	U	50.0	49.5		ug/L		99	54 - 150	1	30
Vinyl chloride	0.50	U	50.0	47.8		ug/L		96	46 - 150	9	30
Xylenes, Total	1.6	U	100	87.3		ug/L		87	59 - 130	18	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*64 - 132*
Dibromofluoromethane	*100*		*75 - 126*
4-Bromofluorobenzene	*93*		*72 - 119*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 400-617882/4
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.18	U	1.0	0.18	ug/L			03/24/23 11:41	1
1,1,2,2-Tetrachloroethane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,1,2-Trichloroethane	0.21	U	5.0	0.21	ug/L			03/24/23 11:41	1
1,1-Dichloroethane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,1-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,2,4-Trichlorobenzene	0.82	U	1.0	0.82	ug/L			03/24/23 11:41	1
1,2-Dibromo-3-Chloropropane	1.5	U	5.0	1.5	ug/L			03/24/23 11:41	1
1,2-Dibromoethane (EDB)	0.23	U	1.0	0.23	ug/L			03/24/23 11:41	1
1,2-Dichlorobenzene	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,2-Dichloroethane	0.19	U	1.0	0.19	ug/L			03/24/23 11:41	1
1,2-Dichloropropane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
1,3-Dichlorobenzene	0.54	U	1.0	0.54	ug/L			03/24/23 11:41	1
1,4-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			03/24/23 11:41	1
2-Butanone (MEK)	2.6	U	25	2.6	ug/L			03/24/23 11:41	1
2-Hexanone	1.4	U	25	1.4	ug/L			03/24/23 11:41	1
4-Methyl-2-pentanone	1.8	U	25	1.8	ug/L			03/24/23 11:41	1
Acetone	10	U	25	10	ug/L			03/24/23 11:41	1
Benzene	0.13	U	1.0	0.13	ug/L			03/24/23 11:41	1
Bromodichloromethane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Bromoform	0.25	U	5.0	0.25	ug/L			03/24/23 11:41	1
Bromomethane	0.98	U	1.0	0.98	ug/L			03/24/23 11:41	1
Carbon disulfide	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Carbon tetrachloride	0.19	U	1.0	0.19	ug/L			03/24/23 11:41	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			03/24/23 11:41	1
Chloroethane	0.76	U	1.0	0.76	ug/L			03/24/23 11:41	1
Chloroform	1.0	U	1.0	1.0	ug/L			03/24/23 11:41	1
Chloromethane	0.32	U	1.0	0.32	ug/L			03/24/23 11:41	1
cis-1,2-Dichloroethene	0.20	U	1.0	0.20	ug/L			03/24/23 11:41	1
cis-1,3-Dichloropropene	0.50	U	5.0	0.50	ug/L			03/24/23 11:41	1
Cyclohexane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Dibromochloromethane	0.24	U	1.0	0.24	ug/L			03/24/23 11:41	1
Dichlorodifluoromethane	0.85	U	1.0	0.85	ug/L			03/24/23 11:41	1
Ethylbenzene	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Isopropylbenzene	0.53	U	1.0	0.53	ug/L			03/24/23 11:41	1
m,p-Xylenes	0.63	U	5.0	0.63	ug/L			03/24/23 11:41	1
Methyl acetate	0.61	U	5.0	0.61	ug/L			03/24/23 11:41	1
Methyl tert-butyl ether	0.22	U	1.0	0.22	ug/L			03/24/23 11:41	1
Methylcyclohexane	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Methylene Chloride	3.0	U	5.0	3.0	ug/L			03/24/23 11:41	1
o-Xylene	0.60	U	5.0	0.60	ug/L			03/24/23 11:41	1
Styrene	1.0	U	1.0	1.0	ug/L			03/24/23 11:41	1
Tetrachloroethene	0.90	U	1.0	0.90	ug/L			03/24/23 11:41	1
Toluene	0.41	U	1.0	0.41	ug/L			03/24/23 11:41	1
trans-1,2-Dichloroethene	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
trans-1,3-Dichloropropene	0.20	U	5.0	0.20	ug/L			03/24/23 11:41	1
Trichloroethene	0.15	U	1.0	0.15	ug/L			03/24/23 11:41	1
Trichlorofluoromethane	0.52	U	1.0	0.52	ug/L			03/24/23 11:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 400-617882/4
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.50	U	1.0	0.50	ug/L			03/24/23 11:41	1
Xylenes, Total	1.6	U	10	1.6	ug/L			03/24/23 11:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*106*		*64 - 132*		*03/24/23 11:41*	*1*
Dibromofluoromethane	*105*		*75 - 126*		*03/24/23 11:41*	*1*
4-Bromofluorobenzene	*97*		*72 - 119*		*03/24/23 11:41*	*1*

Lab Sample ID: LCS 400-617882/1002
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	53.8		ug/L		108	68 - 130
1,1,2,2-Tetrachloroethane	50.0	51.2		ug/L		102	70 - 131
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.5		ug/L		101	60 - 139
1,1,2-Trichloroethane	50.0	52.4		ug/L		105	70 - 130
1,1-Dichloroethane	50.0	54.4		ug/L		109	70 - 130
1,1-Dichloroethene	50.0	49.5		ug/L		99	63 - 134
1,2,4-Trichlorobenzene	50.0	55.1		ug/L		110	60 - 140
1,2-Dibromo-3-Chloropropane	50.0	50.6		ug/L		101	54 - 135
1,2-Dibromoethane (EDB)	50.0	52.1		ug/L		104	70 - 130
1,2-Dichlorobenzene	50.0	57.1		ug/L		114	67 - 130
1,2-Dichloroethane	50.0	61.7		ug/L		123	69 - 130
1,2-Dichloropropane	50.0	54.1		ug/L		108	70 - 130
1,3-Dichlorobenzene	50.0	55.1		ug/L		110	70 - 130
1,4-Dichlorobenzene	50.0	56.4		ug/L		113	70 - 130
2-Butanone (MEK)	200	209		ug/L		105	61 - 145
2-Hexanone	200	271		ug/L		136	65 - 137
4-Methyl-2-pentanone	200	265		ug/L		133	69 - 138
Acetone	200	310		ug/L		155	43 - 160
Benzene	50.0	50.2		ug/L		100	70 - 130
Bromodichloromethane	50.0	53.6		ug/L		107	67 - 133
Bromoform	50.0	49.5		ug/L		99	57 - 140
Bromomethane	50.0	51.3		ug/L		103	10 - 160
Carbon disulfide	50.0	49.2		ug/L		98	61 - 137
Carbon tetrachloride	50.0	54.7		ug/L		109	61 - 137
Chlorobenzene	50.0	53.2		ug/L		106	70 - 130
Chloroethane	50.0	47.9		ug/L		96	55 - 141
Chloroform	50.0	54.2		ug/L		108	69 - 130
Chloromethane	50.0	51.0		ug/L		102	58 - 137
cis-1,2-Dichloroethene	50.0	56.2		ug/L		112	68 - 130
cis-1,3-Dichloropropene	50.0	48.4		ug/L		97	69 - 132
Cyclohexane	50.0	49.7		ug/L		99	70 - 130
Dibromochloromethane	50.0	53.0		ug/L		106	67 - 135
Dichlorodifluoromethane	50.0	44.2		ug/L		88	41 - 146
Ethylbenzene	50.0	54.4		ug/L		109	70 - 130
Isopropylbenzene	50.0	55.4		ug/L		111	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 400-617882/1002
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	50.0	54.4		ug/L		109	70 - 130
Methyl acetate	100	134		ug/L		134	45 - 159
Methyl tert-butyl ether	50.0	48.8		ug/L		98	66 - 130
Methylcyclohexane	50.0	50.0		ug/L		100	70 - 130
Methylene Chloride	50.0	49.5		ug/L		99	66 - 135
o-Xylene	50.0	53.9		ug/L		108	70 - 130
Styrene	50.0	53.5		ug/L		107	70 - 130
Tetrachloroethene	50.0	56.7		ug/L		113	65 - 130
Toluene	50.0	50.6		ug/L		101	70 - 130
trans-1,2-Dichloroethene	50.0	49.9		ug/L		100	70 - 130
trans-1,3-Dichloropropene	50.0	50.9		ug/L		102	63 - 130
Trichloroethene	50.0	50.2		ug/L		100	70 - 130
Trichlorofluoromethane	50.0	49.2		ug/L		98	65 - 138
Vinyl chloride	50.0	43.8		ug/L		88	59 - 136
Xylenes, Total	100	108		ug/L		108	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*99*		*64 - 132*
Dibromofluoromethane	*109*		*75 - 126*
4-Bromofluorobenzene	*93*		*72 - 119*

Lab Sample ID: 400-234445-A-1 MS
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	0.18	U	50.0	49.6		ug/L		99	57 - 142
1,1,2,2-Tetrachloroethane	0.50	U	50.0	49.9		ug/L		100	66 - 135
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	46.6		ug/L		93	55 - 150
1,1,2-Trichloroethane	0.21	U	50.0	52.7		ug/L		105	66 - 131
1,1-Dichloroethane	0.50	U	50.0	51.1		ug/L		102	61 - 144
1,1-Dichloroethene	0.50	U	50.0	45.9		ug/L		92	54 - 147
1,2,4-Trichlorobenzene	0.82	U	50.0	46.5		ug/L		93	39 - 148
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	46.1		ug/L		92	45 - 135
1,2-Dibromoethane (EDB)	0.23	U	50.0	51.7		ug/L		103	64 - 132
1,2-Dichlorobenzene	0.50	U	50.0	52.5		ug/L		105	52 - 137
1,2-Dichloroethane	0.19	U	50.0	56.1		ug/L		112	60 - 141
1,2-Dichloropropane	0.50	U	50.0	51.3		ug/L		103	66 - 137
1,3-Dichlorobenzene	0.54	U	50.0	49.5		ug/L		99	54 - 135
1,4-Dichlorobenzene	0.64	U	50.0	50.4		ug/L		101	53 - 135
2-Butanone (MEK)	2.6	U	200	180		ug/L		90	55 - 150
2-Hexanone	1.4	U	200	253		ug/L		127	65 - 140
4-Methyl-2-pentanone	1.8	U	200	234		ug/L		117	63 - 146
Acetone	10	U	200	250		ug/L		125	43 - 150
Benzene	0.13	U	50.0	48.2		ug/L		96	56 - 142
Bromodichloromethane	0.50	U	50.0	49.5		ug/L		99	59 - 143
Bromoform	0.25	U	50.0	48.1		ug/L		96	50 - 140
Bromomethane	0.98	U	50.0	55.9		ug/L		112	10 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234445-A-1 MS
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Carbon disulfide	0.50	U	50.0	44.9		ug/L		90	48 - 150
Carbon tetrachloride	0.19	U	50.0	50.0		ug/L		100	55 - 145
Chlorobenzene	0.15	U	50.0	51.4		ug/L		103	64 - 130
Chloroethane	0.76	U	50.0	47.6		ug/L		95	50 - 150
Chloroform	1.0	U	50.0	50.6		ug/L		101	60 - 141
Chloromethane	0.32	U	50.0	50.4		ug/L		101	49 - 148
cis-1,2-Dichloroethene	0.20	U	50.0	52.0		ug/L		104	59 - 143
cis-1,3-Dichloropropene	0.50	U	50.0	43.7		ug/L		87	57 - 140
Cyclohexane	0.50	U	50.0	43.2		ug/L		86	58 - 141
Dibromochloromethane	0.24	U	50.0	53.0		ug/L		106	56 - 143
Dichlorodifluoromethane	0.85	U	50.0	43.6		ug/L		87	16 - 150
Ethylbenzene	0.50	U	50.0	50.4		ug/L		101	58 - 131
Isopropylbenzene	0.53	U	50.0	48.5		ug/L		97	56 - 133
m,p-Xylenes	0.63	U	50.0	49.9		ug/L		100	57 - 130
Methyl acetate	0.61	U	100	122		ug/L		122	21 - 150
Methyl tert-butyl ether	0.22	U	50.0	45.9		ug/L		92	59 - 137
Methylcyclohexane	0.50	U	50.0	44.6		ug/L		89	62 - 141
Methylene Chloride	3.0	U	50.0	45.9		ug/L		92	60 - 146
o-Xylene	0.60	U	50.0	50.4		ug/L		101	61 - 130
Styrene	1.0	U	50.0	50.0		ug/L		100	58 - 131
Tetrachloroethene	0.90	U	50.0	52.2		ug/L		104	52 - 133
Toluene	0.41	U	50.0	49.8		ug/L		100	65 - 130
trans-1,2-Dichloroethene	0.50	U	50.0	46.7		ug/L		93	61 - 143
trans-1,3-Dichloropropene	0.20	U	50.0	49.9		ug/L		100	53 - 133
Trichloroethene	0.15	U	50.0	46.6		ug/L		93	64 - 136
Trichlorofluoromethane	0.52	U	50.0	48.5		ug/L		97	54 - 150
Vinyl chloride	0.50	U	50.0	44.8		ug/L		90	46 - 150
Xylenes, Total	1.6	U	100	100		ug/L		100	59 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*64 - 132*
Dibromofluoromethane	*101*		*75 - 126*
4-Bromofluorobenzene	*93*		*72 - 119*

Lab Sample ID: 400-234445-A-1 MSD
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	0.18	U	50.0	48.9		ug/L		98	57 - 142	1	30
1,1,2,2-Tetrachloroethane	0.50	U	50.0	51.7		ug/L		103	66 - 135	4	30
1,1,2-Trichloro-1,2,2-trifluoroethane	0.50	U	50.0	48.2		ug/L		96	55 - 150	3	30
1,1,2-Trichloroethane	0.21	U	50.0	54.0		ug/L		108	66 - 131	2	30
1,1-Dichloroethane	0.50	U	50.0	51.7		ug/L		103	61 - 144	1	30
1,1-Dichloroethene	0.50	U	50.0	48.0		ug/L		96	54 - 147	4	30
1,2,4-Trichlorobenzene	0.82	U	50.0	46.0		ug/L		92	39 - 148	1	30
1,2-Dibromo-3-Chloropropane	1.5	U	50.0	48.5		ug/L		97	45 - 135	5	30
1,2-Dibromoethane (EDB)	0.23	U	50.0	53.0		ug/L		106	64 - 132	2	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 400-234445-A-1 MSD
Matrix: Water
Analysis Batch: 617882

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	0.50	U	50.0	50.5		ug/L		101	52 - 137	4	30
1,2-Dichloroethane	0.19	U	50.0	56.0		ug/L		112	60 - 141	0	30
1,2-Dichloropropane	0.50	U	50.0	51.2		ug/L		102	66 - 137	0	30
1,3-Dichlorobenzene	0.54	U	50.0	47.0		ug/L		94	54 - 135	5	30
1,4-Dichlorobenzene	0.64	U	50.0	47.3		ug/L		95	53 - 135	6	30
2-Butanone (MEK)	2.6	U	200	190		ug/L		95	55 - 150	5	30
2-Hexanone	1.4	U	200	267		ug/L		134	65 - 140	5	30
4-Methyl-2-pentanone	1.8	U	200	243		ug/L		122	63 - 146	4	30
Acetone	10	U	200	263		ug/L		131	43 - 150	5	30
Benzene	0.13	U	50.0	48.0		ug/L		96	56 - 142	1	30
Bromodichloromethane	0.50	U	50.0	49.4		ug/L		99	59 - 143	0	30
Bromoform	0.25	U	50.0	50.2		ug/L		100	50 - 140	4	30
Bromomethane	0.98	U	50.0	58.8		ug/L		118	10 - 150	5	50
Carbon disulfide	0.50	U	50.0	45.4		ug/L		91	48 - 150	1	30
Carbon tetrachloride	0.19	U	50.0	48.6		ug/L		97	55 - 145	3	30
Chlorobenzene	0.15	U	50.0	49.4		ug/L		99	64 - 130	4	30
Chloroethane	0.76	U	50.0	49.3		ug/L		99	50 - 150	3	30
Chloroform	1.0	U	50.0	50.6		ug/L		101	60 - 141	0	30
Chloromethane	0.32	U	50.0	55.3		ug/L		111	49 - 148	9	31
cis-1,2-Dichloroethene	0.20	U	50.0	52.9		ug/L		106	59 - 143	2	30
cis-1,3-Dichloropropene	0.50	U	50.0	44.4		ug/L		89	57 - 140	2	30
Cyclohexane	0.50	U	50.0	43.1		ug/L		86	58 - 141	0	30
Dibromochloromethane	0.24	U	50.0	53.2		ug/L		106	56 - 143	0	30
Dichlorodifluoromethane	0.85	U	50.0	46.1		ug/L		92	16 - 150	5	31
Ethylbenzene	0.50	U	50.0	48.1		ug/L		96	58 - 131	5	30
Isopropylbenzene	0.53	U	50.0	45.8		ug/L		92	56 - 133	6	30
m,p-Xylenes	0.63	U	50.0	47.5		ug/L		95	57 - 130	5	30
Methyl acetate	0.61	U	100	128		ug/L		128	21 - 150	4	30
Methyl tert-butyl ether	0.22	U	50.0	48.7		ug/L		97	59 - 137	6	30
Methylcyclohexane	0.50	U	50.0	43.8		ug/L		88	62 - 141	2	30
Methylene Chloride	3.0	U	50.0	48.4		ug/L		97	60 - 146	5	32
o-Xylene	0.60	U	50.0	47.8		ug/L		96	61 - 130	5	30
Styrene	1.0	U	50.0	48.0		ug/L		96	58 - 131	4	30
Tetrachloroethene	0.90	U	50.0	49.1		ug/L		98	52 - 133	6	30
Toluene	0.41	U	50.0	48.9		ug/L		98	65 - 130	2	30
trans-1,2-Dichloroethene	0.50	U	50.0	46.7		ug/L		93	61 - 143	0	30
trans-1,3-Dichloropropene	0.20	U	50.0	51.3		ug/L		103	53 - 133	3	30
Trichloroethene	0.15	U	50.0	45.6		ug/L		91	64 - 136	2	30
Trichlorofluoromethane	0.52	U	50.0	50.1		ug/L		100	54 - 150	3	30
Vinyl chloride	0.50	U	50.0	48.8		ug/L		98	46 - 150	9	30
Xylenes, Total	1.6	U	100	95.4		ug/L		95	59 - 130	5	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*102*		*64 - 132*
Dibromofluoromethane	*100*		*75 - 126*
4-Bromofluorobenzene	*94*		*72 - 119*

GC/MS VOA

Analysis Batch: 617507

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-16084-1	POL-MW0014I-027.5-20230309	Total/NA	Water	8260D	
670-16084-2	POL-MW0014ID-034.5-20230309	Total/NA	Water	8260D	
670-16084-3	POL-MW0022D-042.5 -20230309	Total/NA	Water	8260D	
670-16084-4	POL-MW0014SI-020.5-20230309	Total/NA	Water	8260D	
670-16084-5	POL-MW0022I-027.5 -20230309	Total/NA	Water	8260D	
670-16084-6	POL-MW0012S-013.5-20230309	Total/NA	Water	8260D	
670-16084-7	POL-MW0017S-013.5-20230309	Total/NA	Water	8260D	
670-16084-8	POL-MW0012I-030.5-20230309	Total/NA	Water	8260D	
670-16084-9	POL-MW0031S-010.0-20230309	Total/NA	Water	8260D	
MB 400-617507/4	Method Blank	Total/NA	Water	8260D	
LCS 400-617507/1002	Lab Control Sample	Total/NA	Water	8260D	
400-234457-B-31 MS	Matrix Spike	Total/NA	Water	8260D	
400-234457-B-31 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 617716

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-16084-10	POL-MW0026I-027.5-20230309	Total/NA	Water	8260D	
670-16084-11	POL-MW0035SI-020.5-20230309	Total/NA	Water	8260D	
670-16084-12	POL-MW0026S-014.8-20230309	Total/NA	Water	8260D	
670-16084-13	POL-MW0028S-010.0-20230309	Total/NA	Water	8260D	
670-16084-14	POL-MW0028I-027.5-20230310	Total/NA	Water	8260D	
MB 400-617716/4	Method Blank	Total/NA	Water	8260D	
LCS 400-617716/1002	Lab Control Sample	Total/NA	Water	8260D	
400-234378-A-6 MS	Matrix Spike	Total/NA	Water	8260D	
400-234378-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 617882

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-16084-15	POL-MW0034S-010.0-20230310	Total/NA	Water	8260D	
MB 400-617882/4	Method Blank	Total/NA	Water	8260D	
LCS 400-617882/1002	Lab Control Sample	Total/NA	Water	8260D	
400-234445-A-1 MS	Matrix Spike	Total/NA	Water	8260D	
400-234445-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0014I-027.5-20230309 — Lab Sample ID: 670-16084-1

Date Collected: 03/09/23 09:25 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 00:13

Client Sample ID: POL-MW0014ID-034.5-20230309 — Lab Sample ID: 670-16084-2

Date Collected: 03/09/23 10:25 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 00:37

Client Sample ID: POL-MW0022D-042.5 -20230309 — Lab Sample ID: 670-16084-3

Date Collected: 03/09/23 11:10 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 01:02

Client Sample ID: POL-MW0014SI-020.5-20230309 — Lab Sample ID: 670-16084-4

Date Collected: 03/09/23 11:25 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 01:27

Client Sample ID: POL-MW0022I-027.5 -20230309 — Lab Sample ID: 670-16084-5

Date Collected: 03/09/23 11:50 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 01:52

Client Sample ID: POL-MW0012S-013.5-20230309 — Lab Sample ID: 670-16084-6

Date Collected: 03/09/23 13:05 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 02:16

Client Sample ID: POL-MW0017S-013.5-20230309 — Lab Sample ID: 670-16084-7

Date Collected: 03/09/23 13:20 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 02:41

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0012I-030.5-20230309 — **Lab Sample ID: 670-16084-8**
Date Collected: 03/09/23 14:10 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 03:06

Client Sample ID: POL-MW0031S-010.0-20230309 — **Lab Sample ID: 670-16084-9**
Date Collected: 03/09/23 14:20 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617507	JE	EET PEN	03/23/23 03:31

Client Sample ID: POL-MW0026I-027.5-20230309 — **Lab Sample ID: 670-16084-10**
Date Collected: 03/09/23 15:00 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617716	JE	EET PEN	03/23/23 13:33

Client Sample ID: POL-MW0035SI-020.5-20230309 — **Lab Sample ID: 670-16084-11**
Date Collected: 03/09/23 15:15 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617716	JE	EET PEN	03/23/23 13:58

Client Sample ID: POL-MW0026S-014.8-20230309 — **Lab Sample ID: 670-16084-12**
Date Collected: 03/09/23 16:35 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	617716	JE	EET PEN	03/23/23 14:48

Client Sample ID: POL-MW0028S-010.0-20230309 — **Lab Sample ID: 670-16084-13**
Date Collected: 03/09/23 16:45 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617716	JE	EET PEN	03/23/23 14:23

Client Sample ID: POL-MW0028I-027.5-20230310 — **Lab Sample ID: 670-16084-14**
Date Collected: 03/10/23 09:05 — **Matrix: Water**
Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	617716	JE	EET PEN	03/23/23 17:17

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Client Sample ID: POL-MW0034S-010.0-20230310

Lab Sample ID: 670-16084-15

Date Collected: 03/10/23 09:50

Matrix: Water

Date Received: 03/10/23 16:53

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	617882	JE	EET PEN	03/24/23 15:51

Laboratory References:

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 670-16084-1
Project/Site: NASA KSC POL

Laboratory: Eurofins Pensacola

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E81010	06-30-23

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET PEN
5030C	Purge and Trap	SW846	EET PEN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET PEN = Eurofins Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-16084-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-16084-1	POL-MW0014I-027.5-20230309	Water	03/09/23 09:25	03/10/23 16:53
670-16084-2	POL-MW0014ID-034.5-20230309	Water	03/09/23 10:25	03/10/23 16:53
670-16084-3	POL-MW0022D-042.5 -20230309	Water	03/09/23 11:10	03/10/23 16:53
670-16084-4	POL-MW0014SI-020.5-20230309	Water	03/09/23 11:25	03/10/23 16:53
670-16084-5	POL-MW0022I-027.5 -20230309	Water	03/09/23 11:50	03/10/23 16:53
670-16084-6	POL-MW0012S-013.5-20230309	Water	03/09/23 13:05	03/10/23 16:53
670-16084-7	POL-MW0017S-013.5-20230309	Water	03/09/23 13:20	03/10/23 16:53
670-16084-8	POL-MW0012I-030.5-20230309	Water	03/09/23 14:10	03/10/23 16:53
670-16084-9	POL-MW0031S-010.0-20230309	Water	03/09/23 14:20	03/10/23 16:53
670-16084-10	POL-MW0026I-027.5-20230309	Water	03/09/23 15:00	03/10/23 16:53
670-16084-11	POL-MW0035SI-020.5-20230309	Water	03/09/23 15:15	03/10/23 16:53
670-16084-12	POL-MW0026S-014.8-20230309	Water	03/09/23 16:35	03/10/23 16:53
670-16084-13	POL-MW0028S-010.0-20230309	Water	03/09/23 16:45	03/10/23 16:53
670-16084-14	POL-MW0028I-027.5-20230310	Water	03/10/23 09:05	03/10/23 16:53
670-16084-15	POL-MW0034S-010.0-20230310	Water	03/10/23 09:50	03/10/23 16:53

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 2726 | PAGE 1 OF 2

PROJECT NO:	FACILITY:	PROJECT MANAGER	PHONE NUMBER	LABORATORY NAME AND CONTACT:
112G09020	NASA KSC - POL	Mark Jarrad	412 921 8622	Eurofins, Kaitlin Dybicki
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER	PHONE NUMBER	ADDRESS
-Chuck Sorden -Aaron Kuppel		Chuck Sorden	321 591 7580	481 Newbury port Ave
		CARRIER/WAYBILL NUMBER		CITY, STATE
		670096 8		Altamonte Springs FL

STANDARD TAT ☑
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

CONTAINER TYPE PLASTIC (P) or GLASS (G): C C
PRESERVATIVE USED: 4°C | 4°C/HCL

DATE YEAR 2023	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	TYPE OF ANALYSIS: 8260B (MOD) Full List	5260B (MOD) Full List	COMMENTS
03/09	0925	POL-MW0014I-0275-20230309	14I	25	31	GW	G	4	✓	✓	
03/09	1025	POL-MW0014D-0341S-20230309	14D	32	37	GW	G	4	✓	✓	
03/09	1110	POL-MW0022D-0425-20230309	22D	40	50	GW	G	4	✓	✓	
03/09	1125	POL-MW0014SI-0205-20230309	14SI	18	23	GW	G	4	✓	✓	
03/09	1150	POL-MW0022I-0275-20230309	22I	25	30	GW	G	4	✓	✓	
03/09	1305	POL-MW0012S-0135-20230309	12S	11	16	GW	G	4	✓	✓	
03/09	1320	POL-MW0017S-0135-20230309	17S	11	16	GW	G	4	✓	✓	
03/09	1410	POL-MW0012I-0305-20230309	12I	28	33	GW	G	4	✓	✓	
03/09	1420	POL-MW0031S-0100-20230309	31S	5	15	GW	G	4	✓	✓	
03/09	1500	POL-MW0026I-0275-20230309	26I	25	30	GW	G	4	✓	✓	
03/09	1515	POL-MW0035SI-0205-20230309	35I	18	23	GW	G	4	✓	✓	
03/09	1635	POL-MW0026S-0148-20230309	26S	14.4	15	GW	G	4	✓	✓	
03/09	1645	POL-MW0028S-0100-20230309	28S	5	15	GW	G	4	✓	✓	

670-16084 Chain of Custody

	DATE	TIME		DATE	TIME
1. RELINQUISHED BY	03/10/23	1430	1. RECEIVED BY James W Gregory	3/10/23	1430
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY MC	3/10/23	1653
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: 0.8 / 0.3

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

4/02R
FORM NO. TtNUS-001

Tetra Tech, Inc.

CHAIN OF CUSTODY | NUMBER No. 2729 | PAGE 2 OF 2

PROJECT NO: 112G09020	FACILITY: NASA KSC - POL	PROJECT MANAGER Mark Jannot	PHONE NUMBER 412 921 8622	LABORATORY NAME AND CONTACT: Eurofins, Kaitlin Dybicki
SAMPLERS (SIGNATURE) - Aaron Kupper; - Chuck Sorden		FIELD OPERATIONS LEADER Chuck Sorden	PHONE NUMBER 321 591 7580	ADDRESS 481 Newbury port Ave
		CARRIER/WAYBILL NUMBER 670009 68		CITY, STATE Altamonte Springs, FL

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2023	TIME	SAMPLE ID	LOCATION ID	TOP DEPTH (FT)	BOTTOM DEPTH (FT)	MATRIX (GW, SO, SW, SD, QC, ETC.)	COLLECTION METHOD GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)		PRESERVATIVE USED		TYPE OF ANALYSIS							COMMENTS
									G	G	HCl 4°C	4°C	SLCOR(MOD) FULL LIST	SLCOR(MOD) FULL LIST						
03/10	0905	POL-MW0028I-0725-20230310	28I	25	30	GW	G	4	✓	✓										
03/10	0950	POL-MW0034S-0100-20230310	34S	5	15	GW	G	4	✓	✓										

1. RELINQUISHED BY	DATE 03/10/23	TIME 1430	1. RECEIVED BY	DATE 3/10/23	TIME 1430		
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME		
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME		
COMMENTS							

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY) 4/02R

FORM NO. TtNUS-001

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s):	COC No: 670-6339.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: kaitlin.dylnicki@et.eurofinsus.com	State of Origin: Florida	Page: Page 1 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): NELAP - Florida		Job #: 670-16084-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 3/24/2023			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA KSC POL	Project #: 67000968			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D/5030C (MOD) Full List	8260D/5030B_UP (MOD) Full List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
POL-MW0014I-027.5-20230309 (670-16084-1)	3/9/23	09:25 Eastern		Water			X	X	4	
POL-MW0014ID-034.5-20230309 (670-16084-2)	3/9/23	10:25 Eastern		Water			X	X	4	
POL-MW0022D-042.5 -20230309 (670-16084-3)	3/9/23	11:10 Eastern		Water			X	X	4	
POL-MW0014SI-020.5-20230309 (670-16084-4)	3/9/23	11:25 Eastern		Water			X	X	4	
POL-MW0022I-027.5 -20230309 (670-16084-5)	3/9/23	11:50 Eastern		Water			X	X	4	
POL-MW0012S-013.5-20230309 (670-16084-6)	3/9/23	13:05 Eastern		Water			X	X	4	
POL-MW0017S-013.5-20230309 (670-16084-7)	3/9/23	13:20 Eastern		Water			X	X	4	
POL-MW0012I-030.5-20230309 (670-16084-8)	3/9/23	14:10 Eastern		Water			X	X	4	
POL-MW0031S-010.0-20230309 (670-16084-9)	3/9/23	14:20 Eastern		Water			X	X	4	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
		3/13 1415		M	3-14-23 907	
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.7°C IR1

Ver: 06/08/2021

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s):	COC No: 670-6339.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: kaitlin.dylnicki@et.eurofinsus.com	State of Origin: Florida	Page: Page 2 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): NELAP - Florida		Job #: 670-16084-1
Address: 3355 McLemore Drive, ,	Due Date Requested: 3/24/2023			
City: Pensacola	TAT Requested (days):			
State, Zip: FL, 32514				
Phone: 850-474-1001(Tel) 850-478-2671(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA KSC POL	Project #: 67000968			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D/5030C (MOD) Full List	8260D/5030B_UP (MOD) Full List	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
POL-MW0026I-027.5-20230309 (670-16084-10)	3/9/23	15:00 Eastern		Water			X	X	4	
POL-MW0035SI-020.5-20230309 (670-16084-11)	3/9/23	15:15 Eastern		Water			X	X	4	
POL-MW0026S-014.8-20230309 (670-16084-12)	3/9/23	16:35 Eastern		Water			X	X	4	
POL-MW0028S-010.0-20230309 (670-16084-13)	3/9/23	16:45 Eastern		Water			X	X	4	
POL-MW0028I-027.5-20230310 (670-16084-14)	3/10/23	09:05 Eastern		Water			X	X	4	
POL-MW0034S-010.0-20230310 (670-16084-15)	3/10/23	09:50 Eastern		Water			X	X	4	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time: 3/13 1415	Company	Received by: M	Date/Time: 3-14-23 1107	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.7°C IR 11

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-16084-1

Login Number: 16084

List Number: 1

Creator: Clerisier, Meline

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-16084-1

Login Number: 16084
List Number: 2
Creator: Peckinpaugh, Marshall

List Source: Eurofins Pensacola
List Creation: 03/14/23 02:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.7°C IR11
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 7/19/2023 12:50:58 PM

JOB DESCRIPTION

NASA KSC POL

JOB NUMBER

670-22767-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

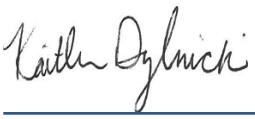
my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: Tetra Tech, Inc.
Job ID: 670-22767-1
Project/Site: NASA KSC POL

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
L	Off-scale high. Actual value is known to be greater than the value given.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-22767-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-22767-1

Receipt

The samples were received on 7/7/2023 2:45 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.9°C

GC/MS VOA

Method 8260D: The initial calibration verification (ICV) analyzed in batch 680-787574 was outside method criteria for the following analyte(s): 2-Hexanone, Acetone, Dichlorodifluoromethane, 2-Butanone (MEK) and 4-Methyl-2-pentanone. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-787648 recovered above the upper control limit for Bromomethane, Carbon disulfide, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane, Vinyl chloride, Cyclohexane, 1,1,2-Trichloro-1,2,2-trifluoroethane and Methylcyclohexane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-787648 recovered outside acceptance criteria, low biased, for 2-Hexanone and 2-Butanone (MEK). A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The laboratory control sample (LCS) for analytical batch 680-787648 recovered outside control limits for the following analytes: Carbon disulfide, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 680-787648 recovered outside control limits for the following analytes: Bromomethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 680-787648 recovered outside control limits for the following analytes: Bromomethane.

Method 8260D: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 680-787506 and analytical batch 680-787648 were outside control limits. Sample matrix interference is suspected.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-787910 recovered above the upper control limit for Bromomethane, Chloroethane, Chloromethane, Dichlorodifluoromethane, Trichlorofluoromethane and Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-787910 recovered outside acceptance criteria, low biased, for 2-Butanone (MEK) and Methyl acetate. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 680-787910 recovered outside control limits for the following analytes: Chloromethane, Dichlorodifluoromethane and Vinyl chloride. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-788091 recovered outside acceptance criteria, low biased, for 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, 2-Hexanone, Acetone, 2-Butanone (MEK) and 4-Methyl-2-pentanone. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-788091 recovered above the upper control limit for

Job ID: 670-22767-1 (Continued)

Laboratory: Eurofins Orlando (Continued)

Chloroethane, Dichlorodifluoromethane and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-788091 recovered outside control limits for the following analyte(s): 2-Hexanone and 2-Butanone (MEK). 2-Hexanone and 2-Butanone (MEK) have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 680-788091 recovered outside control limits for the following analytes: Carbon disulfide and Trichlorofluoromethane. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-788091.

Method 8260D: Bromoform and Trichlorofluoromethane were reported with an E flag in the batch QC (ICV 680-786025/15) because the top two points were dropped from the ICAL. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated. Analytes not detected in the samples.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0036SI-020.5-20230705 — Lab Sample ID: 670-22767-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.50	I	1.0	0.25	ug/L	1		8260D	Total/NA
Trichloroethene	1.9		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0036I-020.5-20230705 — Lab Sample ID: 670-22767-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.25	ug/L	1		8260D	Total/NA
Trichloroethene	1.7		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0041SI-020.5-20230705 — Lab Sample ID: 670-22767-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.6		1.0	0.25	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.1		1.0	0.34	ug/L	1		8260D	Total/NA
Trichloroethene	3.6		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0042SI-020.5-20230705 — Lab Sample ID: 670-22767-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.2		1.0	0.25	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.64	I	1.0	0.34	ug/L	1		8260D	Total/NA
Trichloroethene	3.3		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0043I-025.0-20230705 — Lab Sample ID: 670-22767-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.92	I	1.0	0.25	ug/L	1		8260D	Total/NA
Trichloroethene	10		1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0048I-030.0-20230705 — Lab Sample ID: 670-22767-6

No Detections.

Client Sample ID: POL-MW0048D-040.0-20230706 — Lab Sample ID: 670-22767-7

No Detections.

Client Sample ID: POL-MW0026I-027.5-20230706 — Lab Sample ID: 670-22767-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.8		1.0	0.25	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0026S-013.6-20230706 — Lab Sample ID: 670-22767-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	17		10	3.7	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	100		1.0	0.25	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	3.5		1.0	0.34	ug/L	1		8260D	Total/NA
Trichloroethene	1.1		1.0	0.20	ug/L	1		8260D	Total/NA
Vinyl chloride	8.3		1.0	0.40	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0008I-027.5-20230706 — Lab Sample ID: 670-22767-10

No Detections.

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0028I-027.5-20230706 — Lab Sample ID: 670-22767-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.71	I	1.0	0.25	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0028S-014.5-20230706 — Lab Sample ID: 670-22767-12

No Detections.

Client Sample ID: POL-MW0012S-013.5-20230706 — Lab Sample ID: 670-22767-13

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.88	I	1.0	0.25	ug/L	1		8260D	Total/NA
Trichloroethene	0.27	I	1.0	0.20	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0035SI-020.5-20230706 — Lab Sample ID: 670-22767-14

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.94	I	1.0	0.25	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0036SI-020.5-20230705
Date Collected: 07/05/23 12:45
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 19:40	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 19:40	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 19:40	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 19:40	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 19:40	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 19:40	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 19:40	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 19:40	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 19:40	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 19:40	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 19:40	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 19:40	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 19:40	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 16:22	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 19:40	1
Bromomethane	3.7	U J3	5.0	3.7	ug/L			07/11/23 19:40	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/11/23 19:40	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 19:40	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 19:40	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 19:40	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 19:40	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 19:40	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 19:40	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 16:22	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 19:40	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 19:40	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/11/23 19:40	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 16:22	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 19:40	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 19:40	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 19:40	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 19:40	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 19:40	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 19:40	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 16:22	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 16:22	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 16:22	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 19:40	1
Toluene	**0.50**	**I**	1.0	0.25	ug/L			07/12/23 16:22	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/11/23 19:40	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 19:40	1
Trichloroethene	**1.9**		1.0	0.20	ug/L			07/12/23 16:22	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/11/23 19:40	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/11/23 19:40	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 16:22	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 19:40	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 19:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 19:40	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 19:40	1

Client Sample ID: POL-MW0036SI-020.5-20230705

Lab Sample ID: 670-22767-1

Date Collected: 07/05/23 12:45

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 19:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*70 - 130*		*07/11/23 19:40*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*07/12/23 16:22*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*07/11/23 19:40*	*1*
Dibromofluoromethane (Surr)	*84*		*70 - 130*		*07/12/23 16:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*60 - 124*		*07/11/23 19:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*71*		*60 - 124*		*07/12/23 16:22*	*1*
4-Bromofluorobenzene (Surr)	*94*		*70 - 130*		*07/11/23 19:40*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 16:22*	*1*

Client Sample ID: POL-MW0036I-020.5-20230705

Lab Sample ID: 670-22767-2

Date Collected: 07/05/23 13:20

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 20:00	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 20:00	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 20:00	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 20:00	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 20:00	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 20:00	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:00	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:00	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 20:00	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:00	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:00	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 20:00	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 20:00	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 16:43	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 20:00	1
Bromomethane	3.7	U J3	5.0	3.7	ug/L			07/11/23 20:00	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/11/23 20:00	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 20:00	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 20:00	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 20:00	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 20:00	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 20:00	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 20:00	1
cis-1,2-Dichloroethene	**1.4**		1.0	0.25	ug/L			07/12/23 16:43	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 20:00	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:00	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/11/23 20:00	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 16:43	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 20:00	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 20:00	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 20:00	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 20:00	1

Client Sample ID: POL-MW0036I-020.5-20230705

Lab Sample ID: 670-22767-2

Date Collected: 07/05/23 13:20

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 20:00	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 20:00	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/11/23 20:00	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/11/23 20:00	1
Styrene	0.27	U	1.0	0.27	ug/L			07/11/23 20:00	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 20:00	1
Toluene	0.25	U	1.0	0.25	ug/L			07/11/23 20:00	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/11/23 20:00	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 20:00	1
Trichloroethene	**1.7**		1.0	0.20	ug/L			07/12/23 16:43	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/11/23 20:00	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/11/23 20:00	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/11/23 20:00	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 20:00	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 20:00	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 20:00	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 20:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*96*		*70 - 130*		*07/11/23 20:00*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*07/12/23 16:43*	*1*
Dibromofluoromethane (Surr)	*92*		*70 - 130*		*07/11/23 20:00*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 16:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*60 - 124*		*07/11/23 20:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*72*		*60 - 124*		*07/12/23 16:43*	*1*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*07/11/23 20:00*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/12/23 16:43*	*1*

Client Sample ID: POL-MW0041SI-020.5-20230705

Lab Sample ID: 670-22767-3

Date Collected: 07/05/23 15:24

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 20:19	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 20:19	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 20:19	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 20:19	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 20:19	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 20:19	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:19	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:19	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 20:19	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:19	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:19	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 20:19	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 20:19	1
Benzene	0.27	U	1.0	0.27	ug/L			07/11/23 20:19	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 20:19	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0041SI-020.5-20230705
Date Collected: 07/05/23 15:24
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	3.7	U J3	5.0	3.7	ug/L			07/11/23 20:19	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/11/23 20:19	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 20:19	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 20:19	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 20:19	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 20:19	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 20:19	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 20:19	1
cis-1,2-Dichloroethene	**6.6**		1.0	0.25	ug/L			07/12/23 17:03	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 20:19	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:19	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/11/23 20:19	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/11/23 20:19	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 20:19	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 20:19	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 20:19	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 20:19	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 20:19	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 20:19	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/11/23 20:19	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/11/23 20:19	1
Styrene	0.27	U	1.0	0.27	ug/L			07/11/23 20:19	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 20:19	1
Toluene	0.25	U	1.0	0.25	ug/L			07/11/23 20:19	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.34	ug/L			07/12/23 17:03	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 20:19	1
Trichloroethene	**3.6**		1.0	0.20	ug/L			07/12/23 17:03	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/11/23 20:19	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/11/23 20:19	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/11/23 20:19	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 20:19	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 20:19	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 20:19	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 20:19	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 20:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*07/11/23 20:19*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*07/12/23 17:03*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*07/11/23 20:19*	*1*
Dibromofluoromethane (Surr)	*84*		*70 - 130*		*07/12/23 17:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*60 - 124*		*07/11/23 20:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*71*		*60 - 124*		*07/12/23 17:03*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*07/11/23 20:19*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*07/12/23 17:03*	*1*

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0042SI-020.5-20230705
Date Collected: 07/05/23 16:01
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 20:38	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 20:38	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 20:38	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 20:38	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 20:38	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 20:38	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:38	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:38	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 20:38	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:38	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:38	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 20:38	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 20:38	1
Benzene	0.27	U	1.0	0.27	ug/L			07/11/23 20:38	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 20:38	1
Bromomethane	3.7	U J3	5.0	3.7	ug/L			07/11/23 20:38	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/11/23 20:38	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 20:38	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 20:38	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 20:38	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 20:38	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 20:38	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 20:38	1
cis-1,2-Dichloroethene	**7.2**		1.0	0.25	ug/L			07/12/23 17:24	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 20:38	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:38	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/11/23 20:38	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/11/23 20:38	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 20:38	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 20:38	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 20:38	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 20:38	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 20:38	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 20:38	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/11/23 20:38	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/11/23 20:38	1
Styrene	0.27	U	1.0	0.27	ug/L			07/11/23 20:38	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 20:38	1
Toluene	0.25	U	1.0	0.25	ug/L			07/11/23 20:38	1
trans-1,2-Dichloroethene	**0.64**	**I**	1.0	0.34	ug/L			07/12/23 17:24	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 20:38	1
Trichloroethene	**3.3**		1.0	0.20	ug/L			07/12/23 17:24	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/11/23 20:38	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/11/23 20:38	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/11/23 20:38	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 20:38	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 20:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 20:38	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 20:38	1

Client Sample ID: POL-MW0042SI-020.5-20230705
Lab Sample ID: 670-22767-4

Date Collected: 07/05/23 16:01
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 20:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*70 - 130*		*07/11/23 20:38*	*1*
Toluene-d8 (Surr)	*105*		*70 - 130*		*07/12/23 17:24*	*1*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*07/11/23 20:38*	*1*
Dibromofluoromethane (Surr)	*86*		*70 - 130*		*07/12/23 17:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*80*		*60 - 124*		*07/11/23 20:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 17:24*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*07/11/23 20:38*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 17:24*	*1*

Client Sample ID: POL-MW0043I-025.0-20230705
Lab Sample ID: 670-22767-5

Date Collected: 07/05/23 16:35
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 20:57	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 20:57	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 20:57	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 20:57	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 20:57	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 20:57	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:57	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:57	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 20:57	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:57	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 20:57	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 20:57	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 20:57	1
Benzene	0.27	U	1.0	0.27	ug/L			07/11/23 20:57	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 20:57	1
Bromomethane	3.7	U J3	5.0	3.7	ug/L			07/11/23 20:57	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/11/23 20:57	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 20:57	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 20:57	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 20:57	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 20:57	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 20:57	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 20:57	1
cis-1,2-Dichloroethene	**0.92**	**I**	1.0	0.25	ug/L			07/12/23 17:45	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 20:57	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 20:57	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/11/23 20:57	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/11/23 20:57	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 20:57	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 20:57	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 20:57	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 20:57	1

Client Sample ID: POL-MW0043I-025.0-20230705
Lab Sample ID: 670-22767-5

Date Collected: 07/05/23 16:35
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 20:57	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 20:57	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/11/23 20:57	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/11/23 20:57	1
Styrene	0.27	U	1.0	0.27	ug/L			07/11/23 20:57	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 20:57	1
Toluene	0.25	U	1.0	0.25	ug/L			07/11/23 20:57	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/11/23 20:57	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 20:57	1
Trichloroethene	**10**		1.0	0.20	ug/L			07/12/23 17:45	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/11/23 20:57	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/11/23 20:57	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/11/23 20:57	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 20:57	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 20:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 20:57	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 20:57	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 20:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*95*		*70 - 130*		*07/11/23 20:57*	*1*
Toluene-d8 (Surr)	*103*		*70 - 130*		*07/12/23 17:45*	*1*
Dibromofluoromethane (Surr)	*91*		*70 - 130*		*07/11/23 20:57*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 17:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*81*		*60 - 124*		*07/11/23 20:57*	*1*
1,2-Dichloroethane-d4 (Surr)	*72*		*60 - 124*		*07/12/23 17:45*	*1*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*		*07/11/23 20:57*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/12/23 17:45*	*1*

Client Sample ID: POL-MW0048I-030.0-20230705
Lab Sample ID: 670-22767-6

Date Collected: 07/06/23 10:41
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 18:05	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 18:05	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 18:05	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:05	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 18:05	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 18:05	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:05	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:05	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 18:05	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:05	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:05	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 18:05	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 18:05	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 18:05	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 18:05	1

Client Sample ID: POL-MW0048I-030.0-20230705

Lab Sample ID: 670-22767-6

Date Collected: 07/06/23 10:41

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 18:05	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 18:05	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 18:05	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 18:05	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 18:05	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 18:05	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 18:05	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 18:05	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 18:05	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 18:05	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:05	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 18:05	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 18:05	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 18:05	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 18:05	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 18:05	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 18:05	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 18:05	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 18:05	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 18:05	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 18:05	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 18:05	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 18:05	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 18:05	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 18:05	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 18:05	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 18:05	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:05	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 18:05	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 18:05	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 18:05	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 18:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 18:05	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 18:05	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 18:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/12/23 18:05*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 18:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 18:05*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/12/23 18:05*	*1*

Client Sample ID: POL-MW0048D-040.0-20230706

Lab Sample ID: 670-22767-7

Date Collected: 07/06/23 10:59

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 18:26	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 18:26	1

Client Sample ID: POL-MW0048D-040.0-20230706
Date Collected: 07/06/23 10:59
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-7
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 18:26	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:26	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 18:26	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 18:26	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:26	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:26	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 18:26	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:26	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:26	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 18:26	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 18:26	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 18:26	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 18:26	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 18:26	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 18:26	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 18:26	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 18:26	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 18:26	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 18:26	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 18:26	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 18:26	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 18:26	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 18:26	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:26	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 18:26	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 18:26	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 18:26	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 18:26	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 18:26	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 18:26	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 18:26	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 18:26	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 18:26	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 18:26	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 18:26	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 18:26	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 18:26	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 18:26	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 18:26	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 18:26	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:26	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 18:26	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 18:26	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 18:26	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 18:26	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 18:26	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 18:26	1

Client Sample ID: POL-MW0048D-040.0-20230706
Lab Sample ID: 670-22767-7

Date Collected: 07/06/23 10:59
Matrix: Water
Date Received: 07/07/23 14:45

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/12/23 18:26*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 18:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 18:26*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 18:26*	*1*

Client Sample ID: POL-MW0026I-027.5-20230706
Lab Sample ID: 670-22767-8

Date Collected: 07/06/23 13:00
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 18:47	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 18:47	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 18:47	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:47	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 18:47	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 18:47	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:47	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:47	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 18:47	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:47	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 18:47	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 18:47	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 18:47	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 18:47	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 18:47	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 18:47	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 18:47	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 18:47	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 18:47	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 18:47	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 18:47	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 18:47	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 18:47	1
cis-1,2-Dichloroethene	**1.8**		1.0	0.25	ug/L			07/12/23 18:47	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 18:47	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 18:47	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 18:47	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 18:47	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 18:47	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 18:47	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 18:47	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 18:47	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 18:47	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 18:47	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 18:47	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 18:47	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 18:47	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 18:47	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 18:47	1

Client Sample ID: POL-MW0026I-027.5-20230706
Lab Sample ID: 670-22767-8

Date Collected: 07/06/23 13:00
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 18:47	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 18:47	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 18:47	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 18:47	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/13/23 13:29	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 18:47	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 18:47	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 18:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 18:47	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 18:47	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/12/23 18:47*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 18:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 18:47*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*07/12/23 18:47*	*1*

Client Sample ID: POL-MW0026S-013.6-20230706
Lab Sample ID: 670-22767-9

Date Collected: 07/06/23 13:33
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/14/23 18:22	1
1,1,2,2-Tetrachloroethane	0.40	U J3	1.0	0.40	ug/L			07/14/23 18:22	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/14/23 18:22	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/14/23 18:22	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/14/23 18:22	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/14/23 18:22	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 18:22	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/14/23 18:22	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/14/23 18:22	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 18:22	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 18:22	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/14/23 18:22	1
Acetone	**17**		10	3.7	ug/L			07/14/23 18:22	1
Benzene	0.27	U	1.0	0.27	ug/L			07/14/23 18:22	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/14/23 18:22	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/14/23 18:22	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/14/23 18:22	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/14/23 18:22	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/14/23 18:22	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/14/23 18:22	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/14/23 18:22	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/14/23 18:22	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/14/23 18:22	1
cis-1,2-Dichloroethene	**100**		1.0	0.25	ug/L			07/14/23 18:22	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/14/23 18:22	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/14/23 18:22	1

Client Sample ID: POL-MW0026S-013.6-20230706

Lab Sample ID: 670-22767-9

Date Collected: 07/06/23 13:33

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/14/23 18:22	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/14/23 18:22	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/14/23 18:22	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/14/23 18:22	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/14/23 18:22	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/14/23 18:22	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/14/23 18:22	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/14/23 18:22	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/14/23 18:22	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/14/23 18:22	1
Styrene	0.27	U	1.0	0.27	ug/L			07/14/23 18:22	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/14/23 18:22	1
Toluene	0.25	U	1.0	0.25	ug/L			07/14/23 18:22	1
trans-1,2-Dichloroethene	**3.5**		1.0	0.34	ug/L			07/14/23 18:22	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/14/23 18:22	1
Trichloroethene	**1.1**		1.0	0.20	ug/L			07/14/23 18:22	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/14/23 18:22	1
Vinyl chloride	**8.3**		1.0	0.40	ug/L			07/14/23 18:22	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/14/23 18:22	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/14/23 18:22	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/14/23 18:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/14/23 18:22	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/14/23 18:22	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/14/23 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*122*		*70 - 130*		*07/14/23 18:22*	*1*
Dibromofluoromethane (Surr)	*115*		*70 - 130*		*07/14/23 18:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*60 - 124*		*07/14/23 18:22*	*1*
4-Bromofluorobenzene (Surr)	*114*		*70 - 130*		*07/14/23 18:22*	*1*

Client Sample ID: POL-MW0008I-027.5-20230706

Lab Sample ID: 670-22767-10

Date Collected: 07/06/23 14:14

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 19:07	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 19:07	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 19:07	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 19:07	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 19:07	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 19:07	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:07	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 19:07	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 19:07	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:07	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:07	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 19:07	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 19:07	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0008I-027.5-20230706
Date Collected: 07/06/23 14:14
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-10
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 19:07	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 19:07	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 19:07	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 19:07	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 19:07	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 19:07	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 19:07	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 19:07	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 19:07	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 19:07	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 19:07	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 19:07	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 19:07	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 19:07	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 19:07	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 19:07	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 19:07	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 19:07	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 19:07	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 19:07	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 19:07	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 19:07	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 19:07	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 19:07	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 19:07	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 19:07	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 19:07	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 19:07	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 19:07	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 19:07	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 19:07	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 19:07	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 19:07	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 19:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 19:07	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 19:07	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 19:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/12/23 19:07*	*1*
Dibromofluoromethane (Surr)	*84*		*70 - 130*		*07/12/23 19:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 19:07*	*1*
4-Bromofluorobenzene (Surr)	*104*		*70 - 130*		*07/12/23 19:07*	*1*

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0028I-027.5-20230706
Date Collected: 07/06/23 14:38
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-11
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/13/23 13:48	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/13/23 13:48	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/13/23 13:48	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/13/23 13:48	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/13/23 13:48	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/13/23 13:48	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 13:48	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/13/23 13:48	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/13/23 13:48	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 13:48	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 13:48	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/13/23 13:48	1
Acetone	3.7	U	10	3.7	ug/L			07/13/23 13:48	1
Benzene	0.27	U	1.0	0.27	ug/L			07/13/23 13:48	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/13/23 13:48	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/13/23 13:48	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/13/23 13:48	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/13/23 13:48	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/13/23 13:48	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/13/23 13:48	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/13/23 13:48	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/13/23 13:48	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/13/23 13:48	1
cis-1,2-Dichloroethene	**0.71**	**I**	1.0	0.25	ug/L			07/13/23 13:48	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/13/23 13:48	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/13/23 13:48	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/13/23 13:48	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/13/23 13:48	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/13/23 13:48	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/13/23 13:48	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/13/23 13:48	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/13/23 13:48	1
2-Butanone (MEK)	6.4	U J3	10	6.4	ug/L			07/13/23 13:48	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/13/23 13:48	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/13/23 13:48	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/13/23 13:48	1
Styrene	0.27	U	1.0	0.27	ug/L			07/13/23 13:48	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/13/23 13:48	1
Toluene	0.25	U	1.0	0.25	ug/L			07/13/23 13:48	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/13/23 13:48	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/13/23 13:48	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/13/23 13:48	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/13/23 13:48	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/13/23 13:48	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/13/23 13:48	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/13/23 13:48	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/13/23 13:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/13/23 13:48	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/13/23 13:48	1

Client Sample ID: POL-MW0028I-027.5-20230706
Lab Sample ID: 670-22767-11

Date Collected: 07/06/23 14:38
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/13/23 13:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*112*		*70 - 130*		*07/13/23 13:48*	*1*
Dibromofluoromethane (Surr)	*122*		*70 - 130*		*07/13/23 13:48*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*60 - 124*		*07/13/23 13:48*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/13/23 13:48*	*1*

Client Sample ID: POL-MW0028S-014.5-20230706
Lab Sample ID: 670-22767-12

Date Collected: 07/06/23 15:00
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 19:49	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 19:49	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 19:49	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 19:49	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 19:49	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 19:49	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:49	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 19:49	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 19:49	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:49	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 19:49	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 19:49	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 19:49	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 19:49	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 19:49	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 19:49	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 19:49	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 19:49	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 19:49	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 19:49	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 19:49	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 19:49	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 19:49	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 19:49	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 19:49	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 19:49	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 19:49	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 19:49	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 19:49	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 19:49	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 19:49	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 19:49	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 19:49	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 19:49	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 19:49	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 19:49	1

Client Sample ID: POL-MW0028S-014.5-20230706

Lab Sample ID: 670-22767-12

Date Collected: 07/06/23 15:00

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 19:49	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 19:49	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 19:49	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 19:49	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 19:49	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 19:49	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 19:49	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 19:49	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 19:49	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 19:49	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 19:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 19:49	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 19:49	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 19:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*103*		*70 - 130*		*07/12/23 19:49*	*1*
Dibromofluoromethane (Surr)	*85*		*70 - 130*		*07/12/23 19:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*73*		*60 - 124*		*07/12/23 19:49*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 19:49*	*1*

Client Sample ID: POL-MW0012S-013.5-20230706

Lab Sample ID: 670-22767-13

Date Collected: 07/06/23 15:35

Matrix: Water

Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 20:10	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 20:10	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 20:10	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 20:10	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 20:10	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 20:10	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:10	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 20:10	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 20:10	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:10	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:10	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 20:10	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 20:10	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 20:10	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 20:10	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 20:10	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 20:10	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 20:10	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 20:10	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 20:10	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 20:10	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 20:10	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 20:10	1

Client Sample ID: POL-MW0012S-013.5-20230706
Lab Sample ID: 670-22767-13

Date Collected: 07/06/23 15:35
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.88	I	1.0	0.25	ug/L			07/12/23 20:10	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 20:10	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 20:10	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 20:10	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 20:10	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 20:10	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 20:10	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 20:10	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 20:10	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 20:10	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 20:10	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 20:10	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 20:10	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 20:10	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 20:10	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 20:10	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 20:10	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 20:10	1
Trichloroethene	0.27	I	1.0	0.20	ug/L			07/12/23 20:10	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 20:10	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 20:10	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 20:10	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 20:10	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 20:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 20:10	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 20:10	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 20:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/12/23 20:10*	*1*
Dibromofluoromethane (Surr)	*86*		*70 - 130*		*07/12/23 20:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*75*		*60 - 124*		*07/12/23 20:10*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 20:10*	*1*

Client Sample ID: POL-MW0035SI-020.5-20230706
Lab Sample ID: 670-22767-14

Date Collected: 07/06/23 16:03
Matrix: Water
Date Received: 07/07/23 14:45

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 20:31	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 20:31	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 20:31	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 20:31	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 20:31	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 20:31	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:31	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 20:31	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 20:31	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:31	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0035SI-020.5-20230706
Date Collected: 07/06/23 16:03
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-14
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 20:31	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 20:31	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 20:31	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 20:31	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 20:31	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 20:31	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 20:31	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 20:31	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 20:31	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 20:31	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 20:31	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 20:31	1
Chloromethane	0.54	U J3	1.0	0.54	ug/L			07/12/23 20:31	1
cis-1,2-Dichloroethene	**0.94**	**I**	1.0	0.25	ug/L			07/12/23 20:31	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 20:31	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 20:31	1
Dichlorodifluoromethane	0.36	U J3	1.0	0.36	ug/L			07/12/23 20:31	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 20:31	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 20:31	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 20:31	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 20:31	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 20:31	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 20:31	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 20:31	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 20:31	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 20:31	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 20:31	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 20:31	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 20:31	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 20:31	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 20:31	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 20:31	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 20:31	1
Vinyl chloride	0.40	U J3	1.0	0.40	ug/L			07/12/23 20:31	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 20:31	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 20:31	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 20:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 20:31	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 20:31	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 20:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/12/23 20:31*	*1*
Dibromofluoromethane (Surr)	*87*		*70 - 130*		*07/12/23 20:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*74*		*60 - 124*		*07/12/23 20:31*	*1*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*		*07/12/23 20:31*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	DCA	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(60-124)	(70-130)
670-22767-1	POL-MW0036SI-020.5-20230705	98	90	82	94
670-22767-1	POL-MW0036SI-020.5-20230705	103	84	71	103
670-22767-2	POL-MW0036I-020.5-20230705	96	92	82	96
670-22767-2	POL-MW0036I-020.5-20230705	105	85	72	102
670-22767-3	POL-MW0041SI-020.5-20230705	93	90	83	95
670-22767-3	POL-MW0041SI-020.5-20230705	103	84	71	104
670-22767-4	POL-MW0042SI-020.5-20230705	94	90	80	93
670-22767-4	POL-MW0042SI-020.5-20230705	105	86	73	103
670-22767-5	POL-MW0043I-025.0-20230705	95	91	81	93
670-22767-5	POL-MW0043I-025.0-20230705	103	85	72	102
670-22767-6	POL-MW0048I-030.0-20230705	104	85	73	102
670-22767-7	POL-MW0048D-040.0-20230706	104	85	73	103
670-22767-8	POL-MW0026I-027.5-20230706	104	85	73	104
670-22767-9	POL-MW0026S-013.6-20230706	122	115	110	114
670-22767-10	POL-MW0008I-027.5-20230706	101	84	73	104
670-22767-11	POL-MW0028I-027.5-20230706	112	122	97	102
670-22767-12	POL-MW0028S-014.5-20230706	103	85	73	103
670-22767-13	POL-MW0012S-013.5-20230706	104	86	75	103
670-22767-14	POL-MW0035SI-020.5-20230706	104	87	74	102
LB 680-787506/1-A	Method Blank	93	90	77	96
LCS 680-787648/4	Lab Control Sample	101	101	87	105
LCS 680-787910/4	Lab Control Sample	104	90	89	98
LCS 680-788091/4	Lab Control Sample	97	102	98	92
LCS 680-788254/5	Lab Control Sample	110	111	105	109
LCSD 680-787648/5	Lab Control Sample Dup	101	97	83	105
LCSD 680-787910/5	Lab Control Sample Dup	103	90	88	95
LCSD 680-788091/5	Lab Control Sample Dup	100	100	98	96
LCSD 680-788254/6	Lab Control Sample Dup	105	102	96	101
MB 680-787648/8	Method Blank	91	88	78	95
MB 680-787910/8	Method Blank	101	81	72	106
MB 680-788091/7	Method Blank	108	116	100	110
MB 680-788254/9	Method Blank	118	113	108	105

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 670-22767-1
Project/Site: NASA KSC POL

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water
Prep Type: TCLP

		Percent Surrogate Recovery (Acceptance Limits)			
		TOL	DBFM	DCA	BFB
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(60-124)	(70-130)
752-9089-E-1-A MS	Matrix Spike	89	90	79	93
752-9089-E-1-A MSD	Matrix Spike Duplicate	89	92	87	90

Surrogate Legend

TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: LB 680-787506/1-A
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	LB Result	LB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	4.2	U	20	4.2	ug/L			07/11/23 17:26	20
1,1,2,2-Tetrachloroethane	8.0	U	20	8.0	ug/L			07/11/23 17:26	20
1,1,2-Trichloroethane	6.4	U	20	6.4	ug/L			07/11/23 17:26	20
1,1-Dichloroethane	6.6	U	20	6.6	ug/L			07/11/23 17:26	20
1,1-Dichloroethene	6.6	U	20	6.6	ug/L			07/11/23 17:26	20
1,2-Dibromo-3-Chloropropane	36	U	100	36	ug/L			07/11/23 17:26	20
1,2-Dichlorobenzene	6.2	U	20	6.2	ug/L			07/11/23 17:26	20
1,2-Dichloroethane	5.0	U	20	5.0	ug/L			07/11/23 17:26	20
1,2-Dichloropropane	4.4	U	20	4.4	ug/L			07/11/23 17:26	20
1,3-Dichlorobenzene	6.2	U	20	6.2	ug/L			07/11/23 17:26	20
1,4-Dichlorobenzene	6.2	U	20	6.2	ug/L			07/11/23 17:26	20
2-Hexanone	64	U	200	64	ug/L			07/11/23 17:26	20
Acetone	74	U	200	74	ug/L			07/11/23 17:26	20
Benzene	5.4	U	20	5.4	ug/L			07/11/23 17:26	20
Bromoform	12	U	20	12	ug/L			07/11/23 17:26	20
Bromomethane	74	U	100	74	ug/L			07/11/23 17:26	20
Carbon disulfide	8.6	U	40	8.6	ug/L			07/11/23 17:26	20
Carbon tetrachloride	6.0	U	20	6.0	ug/L			07/11/23 17:26	20
Chlorobenzene	3.0	U	20	3.0	ug/L			07/11/23 17:26	20
Dibromochloromethane	7.8	U	20	7.8	ug/L			07/11/23 17:26	20
Chloroethane	92	U	100	92	ug/L			07/11/23 17:26	20
Chloroform	5.4	U	20	5.4	ug/L			07/11/23 17:26	20
Chloromethane	11	U	20	11	ug/L			07/11/23 17:26	20
cis-1,2-Dichloroethene	5.0	U	20	5.0	ug/L			07/11/23 17:26	20
cis-1,3-Dichloropropene	5.2	U	20	5.2	ug/L			07/11/23 17:26	20
Bromodichloromethane	5.0	U	20	5.0	ug/L			07/11/23 17:26	20
Dichlorodifluoromethane	7.2	U	20	7.2	ug/L			07/11/23 17:26	20
Ethylbenzene	4.0	U	20	4.0	ug/L			07/11/23 17:26	20
1,2-Dibromoethane (EDB)	6.6	U	20	6.6	ug/L			07/11/23 17:26	20
Isopropylbenzene	5.2	U	20	5.2	ug/L			07/11/23 17:26	20
Methyl tert-butyl ether	16	U	100	16	ug/L			07/11/23 17:26	20
Methylene Chloride	64	U	100	64	ug/L			07/11/23 17:26	20
2-Butanone (MEK)	130	U	200	130	ug/L			07/11/23 17:26	20
4-Methyl-2-pentanone	54	U	200	54	ug/L			07/11/23 17:26	20
m,p-Xylenes	9.8	U	20	9.8	ug/L			07/11/23 17:26	20
o-Xylene	5.2	U	20	5.2	ug/L			07/11/23 17:26	20
Styrene	5.4	U	20	5.4	ug/L			07/11/23 17:26	20
Tetrachloroethene	7.0	U	10	7.0	ug/L			07/11/23 17:26	20
Toluene	5.0	U	20	5.0	ug/L			07/11/23 17:26	20
trans-1,2-Dichloroethene	6.8	U	20	6.8	ug/L			07/11/23 17:26	20
trans-1,3-Dichloropropene	4.6	U	20	4.6	ug/L			07/11/23 17:26	20
Trichloroethene	4.0	U	20	4.0	ug/L			07/11/23 17:26	20
Trichlorofluoromethane	6.6	U	20	6.6	ug/L			07/11/23 17:26	20
Vinyl chloride	8.0	U	20	8.0	ug/L			07/11/23 17:26	20
Xylenes, Total	4.6	U	20	4.6	ug/L			07/11/23 17:26	20
Methyl acetate	64	U	100	64	ug/L			07/11/23 17:26	20
Cyclohexane	5.6	U	20	5.6	ug/L			07/11/23 17:26	20
1,1,2-Trichloro-1,2,2-trifluoroethane	4.6	U	20	4.6	ug/L			07/11/23 17:26	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LB 680-787506/1-A
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	LB Result	LB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	6.6	U	20	6.6	ug/L			07/11/23 17:26	20
1,2,4-Trichlorobenzene	11	U	100	11	ug/L			07/11/23 17:26	20

Surrogate	*LB %Recovery*	*LB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*70 - 130*		*07/11/23 17:26*	*20*
Dibromofluoromethane (Surr)	*90*		*70 - 130*		*07/11/23 17:26*	*20*
1,2-Dichloroethane-d4 (Surr)	*77*		*60 - 124*		*07/11/23 17:26*	*20*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*		*07/11/23 17:26*	*20*

Lab Sample ID: MB 680-787648/8
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/11/23 15:20	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/11/23 15:20	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/11/23 15:20	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/11/23 15:20	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/11/23 15:20	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/11/23 15:20	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 15:20	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/11/23 15:20	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/11/23 15:20	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 15:20	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/11/23 15:20	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/11/23 15:20	1
Acetone	3.7	U	10	3.7	ug/L			07/11/23 15:20	1
Benzene	0.27	U	1.0	0.27	ug/L			07/11/23 15:20	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/11/23 15:20	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/11/23 15:20	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/11/23 15:20	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/11/23 15:20	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/11/23 15:20	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/11/23 15:20	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/11/23 15:20	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/11/23 15:20	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/11/23 15:20	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/11/23 15:20	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/11/23 15:20	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/11/23 15:20	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/11/23 15:20	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/11/23 15:20	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/11/23 15:20	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/11/23 15:20	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/11/23 15:20	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/11/23 15:20	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/11/23 15:20	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/11/23 15:20	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-787648/8
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/11/23 15:20	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/11/23 15:20	1
Styrene	0.27	U	1.0	0.27	ug/L			07/11/23 15:20	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/11/23 15:20	1
Toluene	0.25	U	1.0	0.25	ug/L			07/11/23 15:20	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/11/23 15:20	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/11/23 15:20	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/11/23 15:20	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/11/23 15:20	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/11/23 15:20	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/11/23 15:20	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/11/23 15:20	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/11/23 15:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/11/23 15:20	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/11/23 15:20	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/11/23 15:20	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*70 - 130*		*07/11/23 15:20*	*1*
Dibromofluoromethane (Surr)	*88*		*70 - 130*		*07/11/23 15:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*78*		*60 - 124*		*07/11/23 15:20*	*1*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*		*07/11/23 15:20*	*1*

Lab Sample ID: LCS 680-787648/4
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	56.6		ug/L		113	70 - 130
1,1,2,2-Tetrachloroethane	50.0	48.0		ug/L		96	70 - 130
1,1,2-Trichloroethane	50.0	48.5		ug/L		97	70 - 130
1,1-Dichloroethane	50.0	54.9		ug/L		110	70 - 130
1,1-Dichloroethene	50.0	53.7		ug/L		107	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	42.1		ug/L		84	70 - 130
1,2-Dichlorobenzene	50.0	50.5		ug/L		101	70 - 130
1,2-Dichloroethane	50.0	52.3		ug/L		105	70 - 130
1,2-Dichloropropane	50.0	52.8		ug/L		106	70 - 130
1,3-Dichlorobenzene	50.0	50.1		ug/L		100	70 - 130
1,4-Dichlorobenzene	50.0	48.4		ug/L		97	70 - 130
2-Hexanone	250	198		ug/L		79	70 - 130
Acetone	250	209		ug/L		84	67 - 120
Benzene	50.0	51.0		ug/L		102	70 - 130
Bromoform	50.0	43.7		ug/L		87	69 - 129
Bromomethane	50.0	72.6		ug/L		145	28 - 192
Carbon disulfide	50.0	67.9	J3	ug/L		136	70 - 130
Carbon tetrachloride	50.0	57.3		ug/L		115	70 - 130
Chlorobenzene	50.0	46.7		ug/L		93	70 - 130
Dibromochloromethane	50.0	48.9		ug/L		98	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-787648/4
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroethane	50.0	67.7		ug/L		135	31 - 213
Chloroform	50.0	52.4		ug/L		105	70 - 130
Chloromethane	50.0	57.5		ug/L		115	59 - 127
cis-1,2-Dichloroethene	50.0	54.3		ug/L		109	70 - 130
cis-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 130
Bromodichloromethane	50.0	49.2		ug/L		98	70 - 130
Dichlorodifluoromethane	50.0	102	J3	ug/L		204	70 - 130
Ethylbenzene	50.0	48.4		ug/L		97	70 - 130
1,2-Dibromoethane (EDB)	50.0	46.7		ug/L		93	70 - 130
Isopropylbenzene	50.0	52.8		ug/L		106	70 - 130
Methyl tert-butyl ether	50.0	49.3		ug/L		99	70 - 130
Methylene Chloride	50.0	52.6		ug/L		105	70 - 130
2-Butanone (MEK)	250	200		ug/L		80	69 - 120
4-Methyl-2-pentanone	250	202		ug/L		81	68 - 120
m,p-Xylenes	50.0	51.0		ug/L		102	70 - 130
o-Xylene	50.0	44.8		ug/L		90	70 - 130
Styrene	50.0	50.9		ug/L		102	70 - 130
Tetrachloroethene	50.0	55.4		ug/L		111	70 - 130
Toluene	50.0	48.7		ug/L		97	70 - 130
trans-1,2-Dichloroethene	50.0	62.4		ug/L		125	70 - 130
trans-1,3-Dichloropropene	50.0	53.2		ug/L		106	70 - 130
Trichloroethene	50.0	54.8		ug/L		110	70 - 130
Trichlorofluoromethane	50.0	128	J3	ug/L		256	63 - 142
Vinyl chloride	50.0	77.7	J3	ug/L		155	66 - 129
Xylenes, Total	100	95.8		ug/L		96	70 - 130
Methyl acetate	100	89.7		ug/L		90	67 - 120
Cyclohexane	50.0	65.8		ug/L		132	23 - 175
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	62.9		ug/L		126	63 - 141
Methylcyclohexane	50.0	64.0		ug/L		128	70 - 130
1,2,4-Trichlorobenzene	50.0	52.2		ug/L		104	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*70 - 130*
Dibromofluoromethane (Surr)	*101*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 124*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 680-787648/5
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	54.3		ug/L		109	70 - 130	4	30
1,1,2,2-Tetrachloroethane	50.0	46.1		ug/L		92	70 - 130	4	30
1,1,2-Trichloroethane	50.0	49.0		ug/L		98	70 - 130	1	30
1,1-Dichloroethane	50.0	52.9		ug/L		106	70 - 130	4	30
1,1-Dichloroethene	50.0	59.6		ug/L		119	70 - 130	10	20
1,2-Dibromo-3-Chloropropane	50.0	42.6		ug/L		85	70 - 130	1	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-787648/5
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,2-Dichlorobenzene	50.0	50.2		ug/L		100	70 - 130	1	30
1,2-Dichloroethane	50.0	50.8		ug/L		102	70 - 130	3	50
1,2-Dichloropropane	50.0	51.8		ug/L		104	70 - 130	2	20
1,3-Dichlorobenzene	50.0	49.4		ug/L		99	70 - 130	1	30
1,4-Dichlorobenzene	50.0	49.4		ug/L		99	70 - 130	2	30
2-Hexanone	250	199		ug/L		80	70 - 130	1	20
Acetone	250	211		ug/L		84	67 - 120	1	30
Benzene	50.0	48.7		ug/L		97	70 - 130	5	30
Bromoform	50.0	44.7		ug/L		89	69 - 129	2	30
Bromomethane	50.0	104	J3	ug/L		208	28 - 192	36	30
Carbon disulfide	50.0	63.8		ug/L		128	70 - 130	6	30
Carbon tetrachloride	50.0	56.2		ug/L		112	70 - 130	2	30
Chlorobenzene	50.0	46.2		ug/L		92	70 - 130	1	30
Dibromochloromethane	50.0	47.5		ug/L		95	70 - 130	3	30
Chloroethane	50.0	64.3		ug/L		129	31 - 213	5	30
Chloroform	50.0	49.5		ug/L		99	70 - 130	6	30
Chloromethane	50.0	60.1		ug/L		120	59 - 127	4	30
cis-1,2-Dichloroethene	50.0	52.8		ug/L		106	70 - 130	3	30
cis-1,3-Dichloropropene	50.0	49.4		ug/L		99	70 - 130	1	20
Bromodichloromethane	50.0	49.8		ug/L		100	70 - 130	1	30
Dichlorodifluoromethane	50.0	96.1	J3	ug/L		192	70 - 130	6	40
Ethylbenzene	50.0	48.0		ug/L		96	70 - 130	1	20
1,2-Dibromoethane (EDB)	50.0	46.6		ug/L		93	70 - 130	0	30
Isopropylbenzene	50.0	51.7		ug/L		103	70 - 130	2	30
Methyl tert-butyl ether	50.0	48.6		ug/L		97	70 - 130	2	30
Methylene Chloride	50.0	50.9		ug/L		102	70 - 130	3	30
2-Butanone (MEK)	250	198		ug/L		79	69 - 120	1	30
4-Methyl-2-pentanone	250	205		ug/L		82	68 - 120	1	30
m,p-Xylenes	50.0	51.4		ug/L		103	70 - 130	1	30
o-Xylene	50.0	45.2		ug/L		90	70 - 130	1	30
Styrene	50.0	49.5		ug/L		99	70 - 130	3	30
Tetrachloroethene	50.0	55.0		ug/L		110	70 - 130	1	30
Toluene	50.0	48.5		ug/L		97	70 - 130	0	30
trans-1,2-Dichloroethene	50.0	60.2		ug/L		120	70 - 130	4	30
trans-1,3-Dichloropropene	50.0	52.1		ug/L		104	70 - 130	2	30
Trichloroethene	50.0	55.2		ug/L		110	70 - 130	1	30
Trichlorofluoromethane	50.0	122	J3	ug/L		245	63 - 142	4	30
Vinyl chloride	50.0	72.2	J3	ug/L		144	66 - 129	7	30
Xylenes, Total	100	96.6		ug/L		97	70 - 130	1	30
Methyl acetate	100	89.2		ug/L		89	67 - 120	1	30
Cyclohexane	50.0	61.8		ug/L		124	23 - 175	6	30
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	61.0		ug/L		122	63 - 141	3	30
Methylcyclohexane	50.0	61.4		ug/L		123	70 - 130	4	30
1,2,4-Trichlorobenzene	50.0	52.3		ug/L		105	70 - 130	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*101*		*70 - 130*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-787648/5
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	*97*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*83*		*60 - 124*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*

Lab Sample ID: MB 680-787910/8
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 13:26	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 13:26	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 13:26	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 13:26	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 13:26	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 13:26	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:26	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 13:26	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 13:26	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:26	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:26	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 13:26	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 13:26	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 13:26	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 13:26	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 13:26	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 13:26	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 13:26	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 13:26	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 13:26	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 13:26	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 13:26	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 13:26	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 13:26	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 13:26	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 13:26	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 13:26	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 13:26	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 13:26	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 13:26	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 13:26	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 13:26	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 13:26	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 13:26	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 13:26	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 13:26	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 13:26	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 13:26	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 13:26	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-787910/8
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 13:26	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 13:26	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 13:26	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 13:26	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 13:26	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 13:26	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 13:26	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 13:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 13:26	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 13:26	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 13:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*101*		*70 - 130*		*07/12/23 13:26*	*1*
Dibromofluoromethane (Surr)	*81*		*70 - 130*		*07/12/23 13:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*72*		*60 - 124*		*07/12/23 13:26*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*07/12/23 13:26*	*1*

Lab Sample ID: LCS 680-787910/4
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	49.3		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	50.0	51.4		ug/L		103	70 - 130
1,1,2-Trichloroethane	50.0	50.9		ug/L		102	70 - 130
1,1-Dichloroethane	50.0	44.2		ug/L		88	70 - 130
1,1-Dichloroethene	50.0	44.8		ug/L		90	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	45.2		ug/L		90	70 - 130
1,2-Dichlorobenzene	50.0	50.2		ug/L		100	70 - 130
1,2-Dichloroethane	50.0	48.9		ug/L		98	70 - 130
1,2-Dichloropropane	50.0	53.3		ug/L		107	70 - 130
1,3-Dichlorobenzene	50.0	49.3		ug/L		99	70 - 130
1,4-Dichlorobenzene	50.0	47.1		ug/L		94	70 - 130
2-Hexanone	250	234		ug/L		94	70 - 130
Acetone	250	210		ug/L		84	67 - 120
Benzene	50.0	50.1		ug/L		100	70 - 130
Bromoform	50.0	57.1	L	ug/L		114	69 - 129
Bromomethane	50.0	79.3		ug/L		159	28 - 192
Carbon disulfide	50.0	41.8		ug/L		84	70 - 130
Carbon tetrachloride	50.0	52.0		ug/L		104	70 - 130
Chlorobenzene	50.0	48.6		ug/L		97	70 - 130
Dibromochloromethane	50.0	48.5		ug/L		97	70 - 130
Chloroethane	50.0	76.1		ug/L		152	31 - 213
Chloroform	50.0	48.1		ug/L		96	70 - 130
Chloromethane	50.0	66.3	J3	ug/L		133	59 - 127
cis-1,2-Dichloroethene	50.0	48.4		ug/L		97	70 - 130
cis-1,3-Dichloropropene	50.0	50.5		ug/L		101	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-787910/4
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromodichloromethane	50.0	49.0		ug/L		98	70 - 130
Dichlorodifluoromethane	50.0	78.8	J3	ug/L		158	70 - 130
Ethylbenzene	50.0	50.1		ug/L		100	70 - 130
1,2-Dibromoethane (EDB)	50.0	52.3		ug/L		105	70 - 130
Isopropylbenzene	50.0	50.5		ug/L		101	70 - 130
Methyl tert-butyl ether	50.0	48.1		ug/L		96	70 - 130
Methylene Chloride	50.0	43.3		ug/L		87	70 - 130
2-Butanone (MEK)	250	196		ug/L		79	69 - 120
4-Methyl-2-pentanone	250	225		ug/L		90	68 - 120
m,p-Xylenes	50.0	51.2		ug/L		102	70 - 130
o-Xylene	50.0	50.9		ug/L		102	70 - 130
Styrene	50.0	51.1		ug/L		102	70 - 130
Tetrachloroethene	50.0	55.8		ug/L		112	70 - 130
Toluene	50.0	50.9		ug/L		102	70 - 130
trans-1,2-Dichloroethene	50.0	52.7		ug/L		105	70 - 130
trans-1,3-Dichloropropene	50.0	47.3		ug/L		95	70 - 130
Trichloroethene	50.0	55.2		ug/L		110	70 - 130
Trichlorofluoromethane	50.0	66.4	L	ug/L		133	63 - 142
Vinyl chloride	50.0	68.8	J3	ug/L		138	66 - 129
Xylenes, Total	100	102		ug/L		102	70 - 130
Methyl acetate	100	76.1		ug/L		76	67 - 120
Cyclohexane	50.0	50.5		ug/L		101	23 - 175
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.6		ug/L		105	63 - 141
Methylcyclohexane	50.0	57.7		ug/L		115	70 - 130
1,2,4-Trichlorobenzene	50.0	51.1		ug/L		102	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*104*		*70 - 130*
Dibromofluoromethane (Surr)	*90*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*89*		*60 - 124*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 680-787910/5
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	49.3		ug/L		99	70 - 130	0	30
1,1,2,2-Tetrachloroethane	50.0	51.7		ug/L		103	70 - 130	0	30
1,1,2-Trichloroethane	50.0	51.3		ug/L		103	70 - 130	1	30
1,1-Dichloroethane	50.0	44.0		ug/L		88	70 - 130	1	30
1,1-Dichloroethene	50.0	44.8		ug/L		90	70 - 130	0	20
1,2-Dibromo-3-Chloropropane	50.0	44.5		ug/L		89	70 - 130	2	30
1,2-Dichlorobenzene	50.0	50.0		ug/L		100	70 - 130	0	30
1,2-Dichloroethane	50.0	49.6		ug/L		99	70 - 130	1	50
1,2-Dichloropropane	50.0	52.2		ug/L		104	70 - 130	2	20
1,3-Dichlorobenzene	50.0	48.9		ug/L		98	70 - 130	1	30
1,4-Dichlorobenzene	50.0	47.4		ug/L		95	70 - 130	1	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-787910/5
Matrix: Water
Analysis Batch: 787910

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Hexanone			250	239		ug/L		96	70 - 130	2	20
Acetone			250	214		ug/L		85	67 - 120	2	30
Benzene			50.0	49.7		ug/L		99	70 - 130	1	30
Bromoform			50.0	56.6	L	ug/L		113	69 - 129	1	30
Bromomethane			50.0	77.8		ug/L		156	28 - 192	2	30
Carbon disulfide			50.0	41.8		ug/L		84	70 - 130	0	30
Carbon tetrachloride			50.0	51.7		ug/L		103	70 - 130	1	30
Chlorobenzene			50.0	48.6		ug/L		97	70 - 130	0	30
Dibromochloromethane			50.0	47.6		ug/L		95	70 - 130	2	30
Chloroethane			50.0	73.7		ug/L		147	31 - 213	3	30
Chloroform			50.0	47.9		ug/L		96	70 - 130	0	30
Chloromethane			50.0	65.4	J3	ug/L		131	59 - 127	1	30
cis-1,2-Dichloroethene			50.0	48.1		ug/L		96	70 - 130	1	30
cis-1,3-Dichloropropene			50.0	49.9		ug/L		100	70 - 130	1	20
Bromodichloromethane			50.0	48.5		ug/L		97	70 - 130	1	30
Dichlorodifluoromethane			50.0	79.9	J3	ug/L		160	70 - 130	1	40
Ethylbenzene			50.0	50.0		ug/L		100	70 - 130	0	20
1,2-Dibromoethane (EDB)			50.0	52.0		ug/L		104	70 - 130	1	30
Isopropylbenzene			50.0	51.2		ug/L		102	70 - 130	2	30
Methyl tert-butyl ether			50.0	48.1		ug/L		96	70 - 130	0	30
Methylene Chloride			50.0	42.5		ug/L		85	70 - 130	2	30
2-Butanone (MEK)			250	197		ug/L		79	69 - 120	0	30
4-Methyl-2-pentanone			250	226		ug/L		90	68 - 120	0	30
m,p-Xylenes			50.0	50.8		ug/L		102	70 - 130	1	30
o-Xylene			50.0	51.0		ug/L		102	70 - 130	0	30
Styrene			50.0	51.8		ug/L		104	70 - 130	2	30
Tetrachloroethene			50.0	56.4		ug/L		113	70 - 130	1	30
Toluene			50.0	50.1		ug/L		100	70 - 130	1	30
trans-1,2-Dichloroethene			50.0	51.4		ug/L		103	70 - 130	2	30
trans-1,3-Dichloropropene			50.0	46.8		ug/L		94	70 - 130	1	30
Trichloroethene			50.0	54.4		ug/L		109	70 - 130	1	30
Trichlorofluoromethane			50.0	66.9	L	ug/L		134	63 - 142	1	30
Vinyl chloride			50.0	68.2	J3	ug/L		136	66 - 129	1	30
Xylenes, Total			100	102		ug/L		102	70 - 130	0	30
Methyl acetate			100	78.9		ug/L		79	67 - 120	4	30
Cyclohexane			50.0	49.9		ug/L		100	23 - 175	1	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	53.7		ug/L		107	63 - 141	2	30
Methylcyclohexane			50.0	57.7		ug/L		115	70 - 130	0	30
1,2,4-Trichlorobenzene			50.0	50.6		ug/L		101	70 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*103*		*70 - 130*
Dibromofluoromethane (Surr)	*90*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*88*		*60 - 124*
4-Bromofluorobenzene (Surr)	*95*		*70 - 130*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788091/7
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/13/23 12:10	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/13/23 12:10	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/13/23 12:10	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/13/23 12:10	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/13/23 12:10	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/13/23 12:10	1
Acetone	3.7	U	10	3.7	ug/L			07/13/23 12:10	1
Benzene	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/13/23 12:10	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/13/23 12:10	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/13/23 12:10	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/13/23 12:10	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/13/23 12:10	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/13/23 12:10	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/13/23 12:10	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/13/23 12:10	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/13/23 12:10	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/13/23 12:10	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/13/23 12:10	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/13/23 12:10	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/13/23 12:10	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/13/23 12:10	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/13/23 12:10	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
Styrene	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/13/23 12:10	1
Toluene	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/13/23 12:10	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/13/23 12:10	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/13/23 12:10	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/13/23 12:10	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/13/23 12:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788091/7
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/13/23 12:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*108*		*70 - 130*		*07/13/23 12:10*	*1*
Dibromofluoromethane (Surr)	*116*		*70 - 130*		*07/13/23 12:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 124*		*07/13/23 12:10*	*1*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*		*07/13/23 12:10*	*1*

Lab Sample ID: LCS 680-788091/4
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	53.1		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	50.0	42.1		ug/L		84	70 - 130
1,1,2-Trichloroethane	50.0	44.8		ug/L		90	70 - 130
1,1-Dichloroethane	50.0	54.9		ug/L		110	70 - 130
1,1-Dichloroethene	50.0	62.9		ug/L		126	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	38.3		ug/L		77	70 - 130
1,2-Dichlorobenzene	50.0	50.1		ug/L		100	70 - 130
1,2-Dichloroethane	50.0	53.4		ug/L		107	70 - 130
1,2-Dichloropropane	50.0	49.5		ug/L		99	70 - 130
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	70 - 130
1,4-Dichlorobenzene	50.0	50.8		ug/L		102	70 - 130
2-Hexanone	250	157	J3	ug/L		63	70 - 130
Acetone	250	191		ug/L		76	67 - 120
Benzene	50.0	52.0		ug/L		104	70 - 130
Bromoform	50.0	44.3		ug/L		89	69 - 129
Bromomethane	50.0	61.7		ug/L		123	28 - 192
Carbon disulfide	50.0	58.3		ug/L		117	70 - 130
Carbon tetrachloride	50.0	49.8		ug/L		100	70 - 130
Chlorobenzene	50.0	50.5		ug/L		101	70 - 130
Dibromochloromethane	50.0	47.6		ug/L		95	70 - 130
Chloroethane	50.0	67.6		ug/L		135	31 - 213
Chloroform	50.0	54.0		ug/L		108	70 - 130
Chloromethane	50.0	55.7		ug/L		111	59 - 127
cis-1,2-Dichloroethene	50.0	55.5		ug/L		111	70 - 130
cis-1,3-Dichloropropene	50.0	47.5		ug/L		95	70 - 130
Bromodichloromethane	50.0	49.6		ug/L		99	70 - 130
Dichlorodifluoromethane	50.0	53.3		ug/L		107	70 - 130
Ethylbenzene	50.0	49.7		ug/L		99	70 - 130
1,2-Dibromoethane (EDB)	50.0	47.7		ug/L		95	70 - 130
Isopropylbenzene	50.0	51.7		ug/L		103	70 - 130
Methyl tert-butyl ether	50.0	52.7		ug/L		105	70 - 130
Methylene Chloride	50.0	54.3		ug/L		109	70 - 130
2-Butanone (MEK)	250	158	J3	ug/L		63	69 - 120
4-Methyl-2-pentanone	250	171		ug/L		68	68 - 120

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-788091/4
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
m,p-Xylenes			50.0	49.5		ug/L		99	70 - 130		
o-Xylene			50.0	49.2		ug/L		98	70 - 130		
Styrene			50.0	50.4		ug/L		101	70 - 130		
Tetrachloroethene			50.0	49.3		ug/L		99	70 - 130		
Toluene			50.0	47.7		ug/L		95	70 - 130		
trans-1,2-Dichloroethene			50.0	59.3		ug/L		119	70 - 130		
trans-1,3-Dichloropropene			50.0	51.1		ug/L		102	70 - 130		
Trichloroethene			50.0	51.1		ug/L		102	70 - 130		
Trichlorofluoromethane			50.0	67.3		ug/L		135	63 - 142		
Vinyl chloride			50.0	52.1		ug/L		104	66 - 129		
Xylenes, Total			100	98.7		ug/L		99	70 - 130		
Methyl acetate			100	80.9		ug/L		81	67 - 120		
Cyclohexane			50.0	46.8		ug/L		94	23 - 175		
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	52.7		ug/L		105	63 - 141		
Methylcyclohexane			50.0	44.4		ug/L		89	70 - 130		
1,2,4-Trichlorobenzene			50.0	55.5		ug/L		111	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 124*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*

Lab Sample ID: LCSD 680-788091/5
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			50.0	53.4		ug/L		107	70 - 130	1	30
1,1,2,2-Tetrachloroethane			50.0	40.6		ug/L		81	70 - 130	4	30
1,1,2-Trichloroethane			50.0	46.4		ug/L		93	70 - 130	3	30
1,1-Dichloroethane			50.0	55.1		ug/L		110	70 - 130	0	30
1,1-Dichloroethene			50.0	54.0		ug/L		108	70 - 130	15	20
1,2-Dibromo-3-Chloropropane			50.0	38.8		ug/L		78	70 - 130	1	30
1,2-Dichlorobenzene			50.0	52.0		ug/L		104	70 - 130	4	30
1,2-Dichloroethane			50.0	53.8		ug/L		108	70 - 130	1	50
1,2-Dichloropropane			50.0	49.8		ug/L		100	70 - 130	1	20
1,3-Dichlorobenzene			50.0	52.8		ug/L		106	70 - 130	2	30
1,4-Dichlorobenzene			50.0	53.1		ug/L		106	70 - 130	4	30
2-Hexanone			250	163	J3	ug/L		65	70 - 130	4	20
Acetone			250	193		ug/L		77	67 - 120	1	30
Benzene			50.0	52.5		ug/L		105	70 - 130	1	30
Bromoform			50.0	44.2		ug/L		88	69 - 129	0	30
Bromomethane			50.0	63.0		ug/L		126	28 - 192	2	30
Carbon disulfide			50.0	67.9	J3	ug/L		136	70 - 130	15	30
Carbon tetrachloride			50.0	50.0		ug/L		100	70 - 130	0	30
Chlorobenzene			50.0	49.1		ug/L		98	70 - 130	3	30
Dibromochloromethane			50.0	48.3		ug/L		97	70 - 130	1	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-788091/5
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroethane	50.0	68.4		ug/L		137	31 - 213	1	30
Chloroform	50.0	53.5		ug/L		107	70 - 130	1	30
Chloromethane	50.0	54.9		ug/L		110	59 - 127	1	30
cis-1,2-Dichloroethene	50.0	54.9		ug/L		110	70 - 130	1	30
cis-1,3-Dichloropropene	50.0	48.7		ug/L		97	70 - 130	2	20
Bromodichloromethane	50.0	50.8		ug/L		102	70 - 130	2	30
Dichlorodifluoromethane	50.0	62.5		ug/L		125	70 - 130	16	40
Ethylbenzene	50.0	49.2		ug/L		98	70 - 130	1	20
1,2-Dibromoethane (EDB)	50.0	48.3		ug/L		97	70 - 130	1	30
Isopropylbenzene	50.0	51.4		ug/L		103	70 - 130	1	30
Methyl tert-butyl ether	50.0	53.5		ug/L		107	70 - 130	2	30
Methylene Chloride	50.0	54.1		ug/L		108	70 - 130	0	30
2-Butanone (MEK)	250	161	J3	ug/L		64	69 - 120	1	30
4-Methyl-2-pentanone	250	179		ug/L		72	68 - 120	5	30
m,p-Xylenes	50.0	49.2		ug/L		98	70 - 130	1	30
o-Xylene	50.0	48.5		ug/L		97	70 - 130	1	30
Styrene	50.0	51.0		ug/L		102	70 - 130	1	30
Tetrachloroethene	50.0	51.2		ug/L		102	70 - 130	4	30
Toluene	50.0	48.6		ug/L		97	70 - 130	2	30
trans-1,2-Dichloroethene	50.0	58.3		ug/L		117	70 - 130	2	30
trans-1,3-Dichloropropene	50.0	52.2		ug/L		104	70 - 130	2	30
Trichloroethene	50.0	53.4		ug/L		107	70 - 130	4	30
Trichlorofluoromethane	50.0	72.9	J3	ug/L		146	63 - 142	8	30
Vinyl chloride	50.0	52.7		ug/L		105	66 - 129	1	30
Xylenes, Total	100	97.7		ug/L		98	70 - 130	1	30
Methyl acetate	100	82.6		ug/L		83	67 - 120	2	30
Cyclohexane	50.0	52.3		ug/L		105	23 - 175	11	30
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	55.0		ug/L		110	63 - 141	4	30
Methylcyclohexane	50.0	51.7		ug/L		103	70 - 130	15	30
1,2,4-Trichlorobenzene	50.0	57.5		ug/L		115	70 - 130	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*100*		*70 - 130*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 124*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*

Lab Sample ID: MB 680-788254/9
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/14/23 14:01	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/14/23 14:01	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/14/23 14:01	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/14/23 14:01	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/14/23 14:01	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/14/23 14:01	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788254/9
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 14:01	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/14/23 14:01	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/14/23 14:01	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 14:01	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/14/23 14:01	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/14/23 14:01	1
Acetone	3.7	U	10	3.7	ug/L			07/14/23 14:01	1
Benzene	0.27	U	1.0	0.27	ug/L			07/14/23 14:01	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/14/23 14:01	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/14/23 14:01	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/14/23 14:01	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/14/23 14:01	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/14/23 14:01	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/14/23 14:01	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/14/23 14:01	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/14/23 14:01	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/14/23 14:01	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/14/23 14:01	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/14/23 14:01	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/14/23 14:01	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/14/23 14:01	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/14/23 14:01	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/14/23 14:01	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/14/23 14:01	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/14/23 14:01	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/14/23 14:01	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/14/23 14:01	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/14/23 14:01	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/14/23 14:01	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/14/23 14:01	1
Styrene	0.27	U	1.0	0.27	ug/L			07/14/23 14:01	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/14/23 14:01	1
Toluene	0.25	U	1.0	0.25	ug/L			07/14/23 14:01	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/14/23 14:01	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/14/23 14:01	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/14/23 14:01	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/14/23 14:01	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/14/23 14:01	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/14/23 14:01	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/14/23 14:01	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/14/23 14:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/14/23 14:01	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/14/23 14:01	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/14/23 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*118*		*70 - 130*		*07/14/23 14:01*	*1*
Dibromofluoromethane (Surr)	*113*		*70 - 130*		*07/14/23 14:01*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788254/9
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		60 - 124		07/14/23 14:01	1
4-Bromofluorobenzene (Surr)	105		70 - 130		07/14/23 14:01	1

Lab Sample ID: LCS 680-788254/5
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	53.5		ug/L		107	70 - 130
1,1,2,2-Tetrachloroethane	50.0	66.4	J3	ug/L		133	70 - 130
1,1,2-Trichloroethane	50.0	55.1		ug/L		110	70 - 130
1,1-Dichloroethane	50.0	45.5		ug/L		91	70 - 130
1,1-Dichloroethene	50.0	44.1		ug/L		88	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	53.2		ug/L		106	70 - 130
1,2-Dichlorobenzene	50.0	52.8		ug/L		106	70 - 130
1,2-Dichloroethane	50.0	50.4		ug/L		101	70 - 130
1,2-Dichloropropane	50.0	48.9		ug/L		98	70 - 130
1,3-Dichlorobenzene	50.0	53.8		ug/L		108	70 - 130
1,4-Dichlorobenzene	50.0	53.0		ug/L		106	70 - 130
2-Hexanone	250	314		ug/L		126	70 - 130
Acetone	250	262		ug/L		105	67 - 120
Benzene	50.0	49.1		ug/L		98	70 - 130
Bromoform	50.0	48.6		ug/L		97	69 - 129
Bromomethane	50.0	57.4		ug/L		115	28 - 192
Carbon disulfide	50.0	34.3	J3	ug/L		69	70 - 130
Carbon tetrachloride	50.0	55.7		ug/L		111	70 - 130
Chlorobenzene	50.0	54.2		ug/L		108	70 - 130
Dibromochloromethane	50.0	59.7		ug/L		119	70 - 130
Chloroethane	50.0	64.9		ug/L		130	31 - 213
Chloroform	50.0	51.0		ug/L		102	70 - 130
Chloromethane	50.0	41.8		ug/L		84	59 - 127
cis-1,2-Dichloroethene	50.0	53.7		ug/L		107	70 - 130
cis-1,3-Dichloropropene	50.0	52.1		ug/L		104	70 - 130
Bromodichloromethane	50.0	52.8		ug/L		106	70 - 130
Dichlorodifluoromethane	50.0	55.0		ug/L		110	70 - 130
Ethylbenzene	50.0	53.5		ug/L		107	70 - 130
1,2-Dibromoethane (EDB)	50.0	54.3		ug/L		109	70 - 130
Isopropylbenzene	50.0	56.1		ug/L		112	70 - 130
Methyl tert-butyl ether	50.0	51.6		ug/L		103	70 - 130
Methylene Chloride	50.0	47.0		ug/L		94	70 - 130
2-Butanone (MEK)	250	242		ug/L		97	69 - 120
4-Methyl-2-pentanone	250	290		ug/L		116	68 - 120
m,p-Xylenes	50.0	54.7		ug/L		109	70 - 130
o-Xylene	50.0	55.3		ug/L		111	70 - 130
Styrene	50.0	56.7		ug/L		113	70 - 130
Tetrachloroethene	50.0	58.5		ug/L		117	70 - 130
Toluene	50.0	53.7		ug/L		107	70 - 130
trans-1,2-Dichloroethene	50.0	50.2		ug/L		100	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-788254/5
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
trans-1,3-Dichloropropene			50.0	52.9		ug/L		106	70 - 130		
Trichloroethene			50.0	51.1		ug/L		102	70 - 130		
Trichlorofluoromethane			50.0	55.5		ug/L		111	63 - 142		
Vinyl chloride			50.0	49.3		ug/L		99	66 - 129		
Xylenes, Total			100	110		ug/L		110	70 - 130		
Methyl acetate			100	89.8		ug/L		90	67 - 120		
Cyclohexane			50.0	40.2		ug/L		80	23 - 175		
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	43.3		ug/L		87	63 - 141		
Methylcyclohexane			50.0	50.8		ug/L		102	70 - 130		
1,2,4-Trichlorobenzene			50.0	54.5		ug/L		109	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*110*		*70 - 130*
Dibromofluoromethane (Surr)	*111*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*105*		*60 - 124*
4-Bromofluorobenzene (Surr)	*109*		*70 - 130*

Lab Sample ID: LCSD 680-788254/6
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			50.0	49.8		ug/L		100	70 - 130	7	30
1,1,2,2-Tetrachloroethane			50.0	64.5		ug/L		129	70 - 130	3	30
1,1,2-Trichloroethane			50.0	52.9		ug/L		106	70 - 130	4	30
1,1-Dichloroethane			50.0	42.0		ug/L		84	70 - 130	8	30
1,1-Dichloroethene			50.0	41.0		ug/L		82	70 - 130	7	20
1,2-Dibromo-3-Chloropropane			50.0	51.8		ug/L		104	70 - 130	3	30
1,2-Dichlorobenzene			50.0	49.4		ug/L		99	70 - 130	7	30
1,2-Dichloroethane			50.0	46.6		ug/L		93	70 - 130	8	50
1,2-Dichloropropane			50.0	45.8		ug/L		92	70 - 130	7	20
1,3-Dichlorobenzene			50.0	50.0		ug/L		100	70 - 130	7	30
1,4-Dichlorobenzene			50.0	49.1		ug/L		98	70 - 130	8	30
2-Hexanone			250	316		ug/L		126	70 - 130	1	20
Acetone			250	245		ug/L		98	67 - 120	7	30
Benzene			50.0	45.6		ug/L		91	70 - 130	7	30
Bromoform			50.0	47.2		ug/L		94	69 - 129	3	30
Bromomethane			50.0	50.0		ug/L		100	28 - 192	14	30
Carbon disulfide			50.0	31.5	J3	ug/L		63	70 - 130	8	30
Carbon tetrachloride			50.0	50.4		ug/L		101	70 - 130	10	30
Chlorobenzene			50.0	50.0		ug/L		100	70 - 130	8	30
Dibromochloromethane			50.0	56.3		ug/L		113	70 - 130	6	30
Chloroethane			50.0	59.7		ug/L		119	31 - 213	8	30
Chloroform			50.0	46.7		ug/L		93	70 - 130	9	30
Chloromethane			50.0	39.5		ug/L		79	59 - 127	6	30
cis-1,2-Dichloroethene			50.0	48.5		ug/L		97	70 - 130	10	30
cis-1,3-Dichloropropene			50.0	49.5		ug/L		99	70 - 130	5	20
Bromodichloromethane			50.0	49.3		ug/L		99	70 - 130	7	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-788254/6
Matrix: Water
Analysis Batch: 788254

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Dichlorodifluoromethane			50.0	51.1		ug/L		102	70 - 130	7	40
Ethylbenzene			50.0	49.9		ug/L		100	70 - 130	7	20
1,2-Dibromoethane (EDB)			50.0	52.0		ug/L		104	70 - 130	4	30
Isopropylbenzene			50.0	52.3		ug/L		105	70 - 130	7	30
Methyl tert-butyl ether			50.0	50.2		ug/L		100	70 - 130	3	30
Methylene Chloride			50.0	43.4		ug/L		87	70 - 130	8	30
2-Butanone (MEK)			250	239		ug/L		95	69 - 120	1	30
4-Methyl-2-pentanone			250	291		ug/L		117	68 - 120	0	30
m,p-Xylenes			50.0	50.5		ug/L		101	70 - 130	8	30
o-Xylene			50.0	51.1		ug/L		102	70 - 130	8	30
Styrene			50.0	53.5		ug/L		107	70 - 130	6	30
Tetrachloroethene			50.0	53.5		ug/L		107	70 - 130	9	30
Toluene			50.0	50.7		ug/L		101	70 - 130	6	30
trans-1,2-Dichloroethene			50.0	45.5		ug/L		91	70 - 130	10	30
trans-1,3-Dichloropropene			50.0	50.9		ug/L		102	70 - 130	4	30
Trichloroethene			50.0	48.3		ug/L		97	70 - 130	6	30
Trichlorofluoromethane			50.0	48.0		ug/L		96	63 - 142	15	30
Vinyl chloride			50.0	45.3		ug/L		91	66 - 129	9	30
Xylenes, Total			100	102		ug/L		102	70 - 130	8	30
Methyl acetate			100	86.9		ug/L		87	67 - 120	3	30
Cyclohexane			50.0	37.9		ug/L		76	23 - 175	6	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	40.7		ug/L		81	63 - 141	6	30
Methylcyclohexane			50.0	48.6		ug/L		97	70 - 130	4	30
1,2,4-Trichlorobenzene			50.0	49.3		ug/L		99	70 - 130	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*105*		*70 - 130*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 124*
4-Bromofluorobenzene (Surr)	*101*		*70 - 130*

Lab Sample ID: 752-9089-E-1-A MS
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Matrix Spike
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	4.2	U	50.0	48.2		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	8.0	U	50.0	43.7		ug/L		87	70 - 130
1,1,2-Trichloroethane	6.4	U	50.0	42.4		ug/L		85	70 - 130
1,1-Dichloroethane	6.6	U	50.0	46.4		ug/L		93	70 - 130
1,1-Dichloroethene	6.6	U	50.0	51.5		ug/L		103	70 - 130
1,2-Dibromo-3-Chloropropane	36	U	50.0	36.6		ug/L		73	70 - 130
1,2-Dichlorobenzene	6.2	U	50.0	43.7		ug/L		87	70 - 130
1,2-Dichloroethane	5.0	U	50.0	44.8		ug/L		90	70 - 130
1,2-Dichloropropane	4.4	U	50.0	45.4		ug/L		91	70 - 130
1,3-Dichlorobenzene	6.2	U	50.0	43.0		ug/L		86	70 - 130
1,4-Dichlorobenzene	6.2	U	50.0	42.3		ug/L		85	70 - 130
2-Hexanone	64	U J3	250	172	J3	ug/L		69	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 752-9089-E-1-A MS
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Matrix Spike
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	74	U	250	182		ug/L		73	67 - 120
Benzene	5.4	U	50.0	43.4		ug/L		87	70 - 130
Bromoform	12	U	50.0	36.6		ug/L		73	69 - 129
Bromomethane	74	U J3	50.0	72.1		ug/L		144	28 - 192
Carbon disulfide	8.6	U J3	50.0	58.0		ug/L		116	70 - 130
Carbon tetrachloride	6.0	U	50.0	47.6		ug/L		95	70 - 130
Chlorobenzene	3.0	U	50.0	40.0		ug/L		80	70 - 130
Dibromochloromethane	7.8	U	50.0	41.7		ug/L		83	70 - 130
Chloroethane	92	U	50.0	67.6		ug/L		135	31 - 213
Chloroform	5.4	U	50.0	44.8		ug/L		90	70 - 130
Chloromethane	11	U	50.0	51.7		ug/L		103	59 - 127
cis-1,2-Dichloroethene	5.0	U	50.0	51.9		ug/L		104	70 - 130
cis-1,3-Dichloropropene	5.2	U	50.0	43.0		ug/L		86	70 - 130
Bromodichloromethane	5.0	U	50.0	43.9		ug/L		88	70 - 130
Dichlorodifluoromethane	7.2	U J3	50.0	86.5	J3	ug/L		173	70 - 130
Ethylbenzene	4.0	U	50.0	42.0		ug/L		84	70 - 130
1,2-Dibromoethane (EDB)	6.6	U	50.0	40.0		ug/L		80	70 - 130
Isopropylbenzene	5.2	U	50.0	46.2		ug/L		92	70 - 130
Methyl tert-butyl ether	16	U	50.0	41.0		ug/L		82	70 - 130
Methylene Chloride	64	U	50.0	44.1		ug/L		88	70 - 130
2-Butanone (MEK)	130	U J3	250	167	J3	ug/L		67	69 - 120
4-Methyl-2-pentanone	54	U	250	177		ug/L		71	68 - 120
m,p-Xylenes	9.8	U	50.0	43.9		ug/L		88	70 - 130
o-Xylene	5.2	U	50.0	39.4		ug/L		79	70 - 130
Styrene	5.4	U	50.0	43.4		ug/L		87	70 - 130
Tetrachloroethene	7.0	U	50.0	48.8		ug/L		98	70 - 130
Toluene	580	J3	50.0	64.4	J3	ug/L		-1039	70 - 130
trans-1,2-Dichloroethene	6.8	U	50.0	53.3		ug/L		107	70 - 130
trans-1,3-Dichloropropene	4.6	U	50.0	45.5		ug/L		91	70 - 130
Trichloroethene	4.0	U	50.0	45.0		ug/L		90	70 - 130
Trichlorofluoromethane	6.6	U J3	50.0	111	J3	ug/L		222	63 - 142
Vinyl chloride	8.0	U J3	50.0	104	J3	ug/L		208	66 - 129
Xylenes, Total	4.6	U	100	83.3		ug/L		83	70 - 130
Methyl acetate	64	U	100	75.9		ug/L		76	67 - 120
Cyclohexane	5.6	U	50.0	54.5		ug/L		109	23 - 175
1,1,2-Trichloro-1,2,2-trifluoroethane	4.6	U	50.0	51.3		ug/L		103	63 - 141
Methylcyclohexane	6.6	U	50.0	53.8		ug/L		108	70 - 130
1,2,4-Trichlorobenzene	11	U	50.0	42.3		ug/L		85	70 - 130

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Toluene-d8 (Surr)	*89*		*70 - 130*
Dibromofluoromethane (Surr)	*90*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*79*		*60 - 124*
4-Bromofluorobenzene (Surr)	*93*		*70 - 130*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 752-9089-E-1-A MSD
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	4.2	U	50.0	49.6		ug/L		99	70 - 130	3	30
1,1,2,2-Tetrachloroethane	8.0	U	50.0	44.7		ug/L		89	70 - 130	2	30
1,1,2-Trichloroethane	6.4	U	50.0	44.4		ug/L		89	70 - 130	4	30
1,1-Dichloroethane	6.6	U	50.0	48.8		ug/L		98	70 - 130	5	30
1,1-Dichloroethene	6.6	U	50.0	53.3		ug/L		107	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	36	U	50.0	37.7		ug/L		75	70 - 130	3	30
1,2-Dichlorobenzene	6.2	U	50.0	44.0		ug/L		88	70 - 130	1	30
1,2-Dichloroethane	5.0	U	50.0	47.6		ug/L		95	70 - 130	6	50
1,2-Dichloropropane	4.4	U	50.0	47.1		ug/L		94	70 - 130	4	20
1,3-Dichlorobenzene	6.2	U	50.0	43.8		ug/L		88	70 - 130	2	30
1,4-Dichlorobenzene	6.2	U	50.0	42.9		ug/L		86	70 - 130	1	30
2-Hexanone	64	U J3	250	183		ug/L		73	70 - 130	6	20
Acetone	74	U	250	191		ug/L		76	67 - 120	5	30
Benzene	5.4	U	50.0	45.1		ug/L		90	70 - 130	4	30
Bromoform	12	U	50.0	39.0		ug/L		78	69 - 129	6	30
Bromomethane	74	U J3	50.0	70.9		ug/L		142	28 - 192	2	30
Carbon disulfide	8.6	U J3	50.0	59.4		ug/L		119	70 - 130	2	30
Carbon tetrachloride	6.0	U	50.0	50.4		ug/L		101	70 - 130	6	30
Chlorobenzene	3.0	U	50.0	40.9		ug/L		82	70 - 130	2	30
Dibromochloromethane	7.8	U	50.0	43.7		ug/L		87	70 - 130	5	30
Chloroethane	92	U	50.0	68.8		ug/L		138	31 - 213	2	30
Chloroform	5.4	U	50.0	46.6		ug/L		93	70 - 130	4	30
Chloromethane	11	U	50.0	57.8		ug/L		116	59 - 127	11	30
cis-1,2-Dichloroethene	5.0	U	50.0	53.1		ug/L		106	70 - 130	2	30
cis-1,3-Dichloropropene	5.2	U	50.0	44.8		ug/L		90	70 - 130	4	20
Bromodichloromethane	5.0	U	50.0	45.3		ug/L		91	70 - 130	3	30
Dichlorodifluoromethane	7.2	U J3	50.0	88.7	J3	ug/L		177	70 - 130	2	40
Ethylbenzene	4.0	U	50.0	42.5		ug/L		85	70 - 130	1	20
1,2-Dibromoethane (EDB)	6.6	U	50.0	42.9		ug/L		86	70 - 130	7	30
Isopropylbenzene	5.2	U	50.0	46.3		ug/L		93	70 - 130	0	30
Methyl tert-butyl ether	16	U	50.0	44.0		ug/L		88	70 - 130	7	30
Methylene Chloride	64	U	50.0	47.5		ug/L		95	70 - 130	7	30
2-Butanone (MEK)	130	U J3	250	183		ug/L		73	69 - 120	9	30
4-Methyl-2-pentanone	54	U	250	187		ug/L		75	68 - 120	6	30
m,p-Xylenes	9.8	U	50.0	45.6		ug/L		91	70 - 130	4	30
o-Xylene	5.2	U	50.0	40.6		ug/L		81	70 - 130	3	30
Styrene	5.4	U	50.0	45.0		ug/L		90	70 - 130	4	30
Tetrachloroethene	7.0	U	50.0	47.8		ug/L		96	70 - 130	2	30
Toluene	580	J3	50.0	66.0	J3	ug/L		-1036	70 - 130	3	30
trans-1,2-Dichloroethene	6.8	U	50.0	53.0		ug/L		106	70 - 130	1	30
trans-1,3-Dichloropropene	4.6	U	50.0	47.5		ug/L		95	70 - 130	4	30
Trichloroethene	4.0	U	50.0	46.6		ug/L		93	70 - 130	3	30
Trichlorofluoromethane	6.6	U J3	50.0	113	J3	ug/L		226	63 - 142	2	30
Vinyl chloride	8.0	U J3	50.0	104	J3	ug/L		208	66 - 129	0	30
Xylenes, Total	4.6	U	100	86.2		ug/L		86	70 - 130	3	30
Methyl acetate	64	U	100	80.0		ug/L		80	67 - 120	5	30
Cyclohexane	5.6	U	50.0	56.3		ug/L		113	23 - 175	3	30
1,1,2-Trichloro-1,2,2-trifluoroethane	4.6	U	50.0	52.8		ug/L		106	63 - 141	3	30

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 752-9089-E-1-A MSD
Matrix: Water
Analysis Batch: 787648

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methylcyclohexane	6.6	U	50.0	54.9		ug/L		110	70 - 130	2	30
1,2,4-Trichlorobenzene	11	U	50.0	43.3		ug/L		87	70 - 130	2	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*89*		*70 - 130*
Dibromofluoromethane (Surr)	*92*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*87*		*60 - 124*
4-Bromofluorobenzene (Surr)	*90*		*70 - 130*

GC/MS VOA

Leach Batch: 787506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LB 680-787506/1-A	Method Blank	Total/NA	Water	1311	
752-9089-E-1-A MS	Matrix Spike	TCLP	Water	1311	
752-9089-E-1-A MSD	Matrix Spike Duplicate	TCLP	Water	1311	

Analysis Batch: 787648

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22767-1	POL-MW0036SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-2	POL-MW0036I-020.5-20230705	Total/NA	Water	8260D	
670-22767-3	POL-MW0041SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-4	POL-MW0042SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-5	POL-MW0043I-025.0-20230705	Total/NA	Water	8260D	
LB 680-787506/1-A	Method Blank	Total/NA	Water	8260D	787506
MB 680-787648/8	Method Blank	Total/NA	Water	8260D	
LCS 680-787648/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-787648/5	Lab Control Sample Dup	Total/NA	Water	8260D	
752-9089-E-1-A MS	Matrix Spike	TCLP	Water	8260D	787506
752-9089-E-1-A MSD	Matrix Spike Duplicate	TCLP	Water	8260D	787506

Analysis Batch: 787910

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22767-1	POL-MW0036SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-2	POL-MW0036I-020.5-20230705	Total/NA	Water	8260D	
670-22767-3	POL-MW0041SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-4	POL-MW0042SI-020.5-20230705	Total/NA	Water	8260D	
670-22767-5	POL-MW0043I-025.0-20230705	Total/NA	Water	8260D	
670-22767-6	POL-MW0048I-030.0-20230705	Total/NA	Water	8260D	
670-22767-7	POL-MW0048D-040.0-20230706	Total/NA	Water	8260D	
670-22767-8	POL-MW0026I-027.5-20230706	Total/NA	Water	8260D	
670-22767-10	POL-MW0008I-027.5-20230706	Total/NA	Water	8260D	
670-22767-12	POL-MW0028S-014.5-20230706	Total/NA	Water	8260D	
670-22767-13	POL-MW0012S-013.5-20230706	Total/NA	Water	8260D	
670-22767-14	POL-MW0035SI-020.5-20230706	Total/NA	Water	8260D	
MB 680-787910/8	Method Blank	Total/NA	Water	8260D	
LCS 680-787910/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-787910/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 788091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22767-8	POL-MW0026I-027.5-20230706	Total/NA	Water	8260D	
670-22767-11	POL-MW0028I-027.5-20230706	Total/NA	Water	8260D	
MB 680-788091/7	Method Blank	Total/NA	Water	8260D	
LCS 680-788091/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-788091/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 788254

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22767-9	POL-MW0026S-013.6-20230706	Total/NA	Water	8260D	
MB 680-788254/9	Method Blank	Total/NA	Water	8260D	
LCS 680-788254/5	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-788254/6	Lab Control Sample Dup	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0036SI-020.5-20230705 — Lab Sample ID: 670-22767-1

Date Collected: 07/05/23 12:45 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787648	Y1S	EET SAV	07/11/23 19:40
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 16:22

Client Sample ID: POL-MW0036I-020.5-20230705 — Lab Sample ID: 670-22767-2

Date Collected: 07/05/23 13:20 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787648	Y1S	EET SAV	07/11/23 20:00
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 16:43

Client Sample ID: POL-MW0041SI-020.5-20230705 — Lab Sample ID: 670-22767-3

Date Collected: 07/05/23 15:24 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787648	Y1S	EET SAV	07/11/23 20:19
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 17:03

Client Sample ID: POL-MW0042SI-020.5-20230705 — Lab Sample ID: 670-22767-4

Date Collected: 07/05/23 16:01 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787648	Y1S	EET SAV	07/11/23 20:38
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 17:24

Client Sample ID: POL-MW0043I-025.0-20230705 — Lab Sample ID: 670-22767-5

Date Collected: 07/05/23 16:35 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787648	Y1S	EET SAV	07/11/23 20:57
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 17:45

Client Sample ID: POL-MW0048I-030.0-20230705 — Lab Sample ID: 670-22767-6

Date Collected: 07/06/23 10:41 — **Matrix: Water**
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 18:05

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0048D-040.0-20230706
Lab Sample ID: 670-22767-7
Date Collected: 07/06/23 10:59
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 18:26

Client Sample ID: POL-MW0026I-027.5-20230706
Lab Sample ID: 670-22767-8
Date Collected: 07/06/23 13:00
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 18:47
Total/NA	Analysis	8260D		1	788091	P1C	EET SAV	07/13/23 13:29

Client Sample ID: POL-MW0026S-013.6-20230706
Lab Sample ID: 670-22767-9
Date Collected: 07/06/23 13:33
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	788254	P1C	EET SAV	07/14/23 18:22

Client Sample ID: POL-MW0008I-027.5-20230706
Lab Sample ID: 670-22767-10
Date Collected: 07/06/23 14:14
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 19:07

Client Sample ID: POL-MW0028I-027.5-20230706
Lab Sample ID: 670-22767-11
Date Collected: 07/06/23 14:38
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	788091	P1C	EET SAV	07/13/23 13:48

Client Sample ID: POL-MW0028S-014.5-20230706
Lab Sample ID: 670-22767-12
Date Collected: 07/06/23 15:00
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 19:49

Client Sample ID: POL-MW0012S-013.5-20230706
Lab Sample ID: 670-22767-13
Date Collected: 07/06/23 15:35
Matrix: Water
Date Received: 07/07/23 14:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 20:10

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Client Sample ID: POL-MW0035SI-020.5-20230706
Date Collected: 07/06/23 16:03
Date Received: 07/07/23 14:45

Lab Sample ID: 670-22767-14
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787910	Y1S	EET SAV	07/12/23 20:31

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 670-22767-1
Project/Site: NASA KSC POL

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-24
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas DEQ	State	19-015-0	02-01-24
California	State	2939	06-30-23 *
Florida	NELAP	E87052	06-30-24
Georgia	State	E87052	06-30-24
Georgia (DW)	State	803	06-30-24
Guam	State	19-007R	04-17-24
Hawaii	State	<cert No.>	06-30-23 *
Illinois	NELAP	200022	11-30-23
Iowa	State	353	07-01-25
Kentucky (UST)	State	NA	06-30-24
Louisiana	NELAP	30690	06-30-24
Louisiana (All)	NELAP	30690	06-30-24
Louisiana (DW)	State	LA009	12-31-23
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-23
Massachusetts	State	M-GA006	06-30-24
Michigan	State	9925	06-30-24
Mississippi	State	<cert No.>	06-30-24
Nebraska	State	NE-OS-7-04	06-30-24
New Jersey	NELAP	GA769	06-30-24
New Mexico	State	GA00006	06-30-24
North Carolina (DW)	State	13701	07-31-23
North Carolina (WW/SW)	State	269	12-31-23
Pennsylvania	NELAP	68-00474	06-30-24
Puerto Rico	State	GA00006	01-01-24
South Carolina	State	98001	06-30-23 *
Tennessee	State	TN02961	06-30-24
Texas	NELAP	T1047004185-19-14	11-30-23
Texas	TCEQ Water Supply	T104704185	06-30-24
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-24
Wyoming	State	8TMS-L	06-30-23 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SAV
5030B	Purge and Trap	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22767-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-22767-1	POL-MW0036SI-020.5-20230705	Water	07/05/23 12:45	07/07/23 14:45
670-22767-2	POL-MW0036I-020.5-20230705	Water	07/05/23 13:20	07/07/23 14:45
670-22767-3	POL-MW0041SI-020.5-20230705	Water	07/05/23 15:24	07/07/23 14:45
670-22767-4	POL-MW0042SI-020.5-20230705	Water	07/05/23 16:01	07/07/23 14:45
670-22767-5	POL-MW0043I-025.0-20230705	Water	07/05/23 16:35	07/07/23 14:45
670-22767-6	POL-MW0048I-030.0-20230705	Water	07/06/23 10:41	07/07/23 14:45
670-22767-7	POL-MW0048D-040.0-20230706	Water	07/06/23 10:59	07/07/23 14:45
670-22767-8	POL-MW0026I-027.5-20230706	Water	07/06/23 13:00	07/07/23 14:45
670-22767-9	POL-MW0026S-013.6-20230706	Water	07/06/23 13:33	07/07/23 14:45
670-22767-10	POL-MW0008I-027.5-20230706	Water	07/06/23 14:14	07/07/23 14:45
670-22767-11	POL-MW0028I-027.5-20230706	Water	07/06/23 14:38	07/07/23 14:45
670-22767-12	POL-MW0028S-014.5-20230706	Water	07/06/23 15:00	07/07/23 14:45
670-22767-13	POL-MW0012S-013.5-20230706	Water	07/06/23 15:35	07/07/23 14:45
670-22767-14	POL-MW0035SI-020.5-20230706	Water	07/06/23 16:03	07/07/23 14:45

TETRA TECH

CHAIN OF CUSTODY

NO.

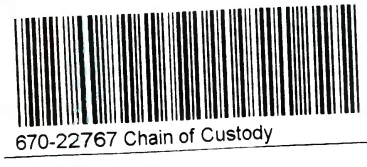
Project No: 112G09020	Facility: NASA KSC	Project Manger: Mark Jonnet	Phone: (412) 921-8622
Samplers: Natalie Fabbri - NF Natalie Volk - NV		Field Ops. Leader: Chuck Sorden	Phone: (321) 591-7580
		Fed Ex Airbill Number:	

Laboratory Name and Contact: Eurofins Kaitlin Dylnicki

Address: 481 Newburyport Ave

City, State, Zip: Altamonte Springs, FL 32701

Date Year: 2023	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	Container Type: Plastic (P) or Glass (G)	Container Type: Plastic (P) or Glass (G)							Comments
										8260B (MOD) NASA POL CUSTOM	8260B (MOD) NASA POL CUSTOM							
										Preservative Used:								
										HCl/ice	ice							
07/05	1245	POL-MW00365I-020.5-20230705		18	23	GW	G	4		2	2							
07/05	1320	POL-MW00361-020.5-20230705		25	30	GW	G	4		2	2							
07/05	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	NF						
07/05	1524	POL-MW00415I-020.5-20230705		18	23	GW	G	4		2	2							
07/05	1601	POL-MW00425I-020.5-20230705		18	23	GW	G	4		2	2							
07/05	1635	POL-MW00431-025.0-20230705		20	30	GW	G	4		2	2							
07/06	1041	POL-MW00481-030.0-20230706		25	35	GW	G	4		2	2							
07/06	1059	POL-MW00480-040.0-20230706		35	45	GW	G	4		2	2							
07/06	1300	POL-MW00261-027.5-20230706		25	30	GW	G	4		2	2							
07/06	1333	POL-MW00265-013.6-20230706		5	15	GW	G	4		2	2							
07/06	1414	POL-MW00081-027.5-20230706		25	30	GW	G	4		2	2							
07/06	1438	POL-MW00281-027.5-20230706		25	30	GW	G	4		2	2							
07/06	1500	POL-MW00285-014.5-20230706		5	15	GW	G	4		2	2							
07/06	1535	POL-MW00125-013.5-20230706		11	16	GW	G	4		2	2							
07/06	1603	POL-MW00355I-020.5-20230706		18	23	GW	G	4		2	2							
07/06	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	NF						



1. Relinquished By:	Date: 7-7-23	Time: 1445	1. Received By:		Date: 7/7/23	Time: 1445	
2. Relinquished By:	Date:	Time:	2. Received By:		Date:	Time:	

Comments:

3.4|2.4 596

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s):	COC No: 670-11705.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: kaitlin.dylnicki@et.eurofinsus.com	State of Origin: Florida	Page: Page 1 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): NELAP - Florida		Job #: 670-22767-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/19/2023			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: NASA KSC POL / SW3	Project #: 67000968			
Site:	SSOW#:			

Analysis Requested

Preservation Codes.

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D/5030B (MOD) POL/SW3 Custom	8260D/5030B_UP (MOD) POL/SW3 Custom	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
POL-MW0036SI-020.5-20230705 (670-22767-1)	7/5/23	12:45 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0036I-020.5-20230705 (670-22767-2)	7/5/23	13:20 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0041SI-020.5-20230705 (670-22767-3)	7/5/23	15:24 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0042SI-020.5-20230705 (670-22767-4)	7/5/23	16:01 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0043I-025.0-20230705 (670-22767-5)	7/5/23	16:35 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0048I-030 0-20230705 (670-22767-6)	7/6/23	10:41 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0048D-040 0-20230706 (670-22767-7)	7/6/23	10.59 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0026I-027.5-20230706 (670-22767-8)	7/6/23	13:00 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0026S-013.6-20230706 (670-22767-9)	7/6/23	13:33 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	BB	7/6 1700		TH	7-11-23	
2	Relinquished by:	Date/Time:	Company	Received by:	Date/Time: 9:58	Company
3	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.	Cooler Temperature(s) °C and Other Remarks: 2.9 - 3.0

Ver: 06/08/2021

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-260-6110

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Dylnicki, Kaitlin	Carrier Tracking No(s):	COC No: 670-11705.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: kaitlin.dylnicki@et.eurofinsus.com	State of Origin: Florida	Page: Page 2 of 2
Company: Eurofins Environment Testing Southeast,		Accreditations Required (See note): NELAP - Florida		Job #: 670-22767-1
Address: 5102 LaRoche Avenue, ,	Due Date Requested: 7/19/2023			
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404	PO #:			
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	WO #:			
Email:	Project #: 67000968			
Project Name: NASA KSC POL / SW3	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260D/5030B (MOD) POL/SW3 Custom	8260D/5030B_UP (MOD) POL/SW3 Custom	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
POL-MW0008I-027.5-20230706 (670-22767-10)	7/6/23	14.14 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0028I-027.5-20230706 (670-22767-11)	7/6/23	14:38 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0028S-014.5-20230706 (670-22767-12)	7/6/23	15:00 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0012S-013.5-20230706 (670-22767-13)	7/6/23	15:35 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL
POL-MW0035SI-020.5-20230706 (670-22767-14)	7/6/23	16:03 Eastern		Water			X	X	4	unp incase of HDSP in HCL, UNP IN CASE HDSP IN HCL

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southeast, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing Southeast, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southeast, LLC attention immediately If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southeast, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements.

Empty Kit Relinquished by	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time:	Company	Received by	Date/Time:	Company
1	BD	7/10 1700		TH	07-11-23	
2	Relinquished by	Date/Time:	Company	Received by	Date/Time: 0:58	Company
3	Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Custody Seal No

Cooler Temperature(s) °C and Other Remarks: 2.9 - 3.0

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22767-1

Login Number: 22767

List Number: 1

Creator: Wehr, Alex C

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22767-1

Login Number: 22767
List Number: 2
Creator: Harley, Tynisha

List Source: Eurofins Savannah
List Creation: 07/11/23 12:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Mark Jonnet
Tetra Tech, Inc.
Foster Plaza 7
661 Anderson Drive
Suite 200
Pittsburgh, Pennsylvania 15220-2745

Generated 7/17/2023 2:28:31 PM

JOB DESCRIPTION

NASA KSC POL

JOB NUMBER

670-22768-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

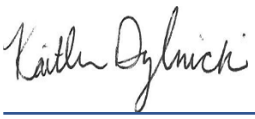
See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-22768-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-22768-1

Receipt
The samples were received on 7/7/2023 4:32 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

GC/MS VOA
Method 8260D: The matrix spike (MS) recoveries for analytical batch 860-111855 were outside control limits for one or more analytes. See QC Sample Results for detail. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery is within acceptance limits.

Method 8260D: Surrogate recovery for the following sample was outside control limits: (860-52798-B-10 MS). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Client Sample ID: POL-MW00141D-034.5-20230707 — Lab Sample ID: 670-22768-1

No Detections.

Client Sample ID: POL-MW0045I-025.0-20230707 — Lab Sample ID: 670-22768-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.3	I	5.0	0.79	ug/L	1		8260D	Total/NA

Client Sample ID: POL-MW0044D-035.0-20230707 — Lab Sample ID: 670-22768-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.71	ug/L	1		8260D	Total/NA
Trichloroethene	1.5	I	5.0	0.79	ug/L	1		8260D	Total/NA
Vinyl chloride	1.1	I	2.0	0.64	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Client Sample ID: POL-MW00141D-034.5-20230707
Date Collected: 07/07/23 08:57
Date Received: 07/07/23 16:32

Lab Sample ID: 670-22768-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	5.0	1.7	ug/L			07/12/23 18:17	1
1,1,2,2-Tetrachloroethane	0.47	U	1.0	0.47	ug/L			07/12/23 18:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	10	3.2	ug/L			07/12/23 18:17	1
1,1,2-Trichloroethane	0.51	U	1.0	0.51	ug/L			07/12/23 18:17	1
1,1-Dichloroethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:17	1
1,1-Dichloroethene	0.74	U	1.0	0.74	ug/L			07/12/23 18:17	1
1,2,4-Trichlorobenzene	1.8	U	5.0	1.8	ug/L			07/12/23 18:17	1
1,2-Dibromo-3-Chloropropane	1.3	U	5.0	1.3	ug/L			07/12/23 18:17	1
1,2-Dibromoethane (EDB)	1.0	U	5.0	1.0	ug/L			07/12/23 18:17	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:17	1
1,2-Dichloroethane	0.59	U	1.0	0.59	ug/L			07/12/23 18:17	1
1,2-Dichloropropane	0.67	U	5.0	0.67	ug/L			07/12/23 18:17	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:17	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:17	1
2-Butanone (MEK)	8.3	U	50	8.3	ug/L			07/12/23 18:17	1
2-Hexanone	7.4	U	50	7.4	ug/L			07/12/23 18:17	1
4-Methyl-2-pentanone	7.5	U	50	7.5	ug/L			07/12/23 18:17	1
Acetone	1.2	U	100	1.2	ug/L			07/12/23 18:17	1
Benzene	0.46	U	1.0	0.46	ug/L			07/12/23 18:17	1
Bromodichloromethane	0.55	U	1.0	0.55	ug/L			07/12/23 18:17	1
Bromoform	0.63	U	5.0	0.63	ug/L			07/12/23 18:17	1
Bromomethane	1.4	U	5.0	1.4	ug/L			07/12/23 18:17	1
Carbon disulfide	1.9	U	5.0	1.9	ug/L			07/12/23 18:17	1
Carbon tetrachloride	0.90	U	5.0	0.90	ug/L			07/12/23 18:17	1
Chlorobenzene	0.53	U	1.0	0.53	ug/L			07/12/23 18:17	1
Chloroethane	2.0	U	10	2.0	ug/L			07/12/23 18:17	1
Chloroform	0.64	U	1.0	0.64	ug/L			07/12/23 18:17	1
Chloromethane	2.0	U	10	2.0	ug/L			07/12/23 18:17	1
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			07/12/23 18:17	1
Cyclohexane	1.5	U	5.0	1.5	ug/L			07/12/23 18:17	1
Dibromochloromethane	0.55	U	5.0	0.55	ug/L			07/12/23 18:17	1
Dichlorodifluoromethane	0.92	U	1.0	0.92	ug/L			07/12/23 18:17	1
Ethylbenzene	0.41	U	1.0	0.41	ug/L			07/12/23 18:17	1
Isopropylbenzene	0.61	U	1.0	0.61	ug/L			07/12/23 18:17	1
m,p-Xylenes	1.2	U	10	1.2	ug/L			07/12/23 18:17	1
Methyl acetate	4.0	U	20	4.0	ug/L			07/12/23 18:17	1
Methyl tert-butyl ether	1.4	U	5.0	1.4	ug/L			07/12/23 18:17	1
Methylcyclohexane	0.61	U	10	0.61	ug/L			07/12/23 18:17	1
Methylene Chloride	1.7	U	5.0	1.7	ug/L			07/12/23 18:17	1
o-Xylene	0.55	U	1.0	0.55	ug/L			07/12/23 18:17	1
Styrene	0.66	U	1.0	0.66	ug/L			07/12/23 18:17	1
Tetrachloroethene	0.80	U	1.0	0.80	ug/L			07/12/23 18:17	1
Toluene	0.48	U	1.0	0.48	ug/L			07/12/23 18:17	1
trans-1,2-Dichloroethene	0.95	U	1.0	0.95	ug/L			07/12/23 18:17	1
trans-1,3-Dichloropropene	1.3	U	5.0	1.3	ug/L			07/12/23 18:17	1
Trichloroethene	0.79	U	5.0	0.79	ug/L			07/12/23 18:17	1
Trichlorofluoromethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:17	1
Vinyl chloride	0.64	U	2.0	0.64	ug/L			07/12/23 18:17	1
Xylenes, Total	1.2	U	10	1.2	ug/L			07/12/23 18:17	1

Client Sample ID: POL-MW00141D-034.5-20230707

Lab Sample ID: 670-22768-1

Date Collected: 07/07/23 08:57

Matrix: Water

Date Received: 07/07/23 16:32

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*106*		*74 - 124*		*07/12/23 18:17*	*1*
Dibromofluoromethane (Surr)	*79*		*75 - 131*		*07/12/23 18:17*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*07/12/23 18:17*	*1*

Method: SW846 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.71	U	1.0	0.71	ug/L			07/13/23 15:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*102*		*74 - 124*		*07/13/23 15:56*	*1*
Dibromofluoromethane (Surr)	*99*		*75 - 131*		*07/13/23 15:56*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*07/13/23 15:56*	*1*

Client Sample ID: POL-MW0045I-025.0-20230707

Lab Sample ID: 670-22768-2

Date Collected: 07/07/23 09:27

Matrix: Water

Date Received: 07/07/23 16:32

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	5.0	1.7	ug/L			07/12/23 18:37	1
1,1,2,2-Tetrachloroethane	0.47	U	1.0	0.47	ug/L			07/12/23 18:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	10	3.2	ug/L			07/12/23 18:37	1
1,1,2-Trichloroethane	0.51	U	1.0	0.51	ug/L			07/12/23 18:37	1
1,1-Dichloroethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:37	1
1,1-Dichloroethene	0.74	U	1.0	0.74	ug/L			07/12/23 18:37	1
1,2,4-Trichlorobenzene	1.8	U	5.0	1.8	ug/L			07/12/23 18:37	1
1,2-Dibromo-3-Chloropropane	1.3	U	5.0	1.3	ug/L			07/12/23 18:37	1
1,2-Dibromoethane (EDB)	1.0	U	5.0	1.0	ug/L			07/12/23 18:37	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:37	1
1,2-Dichloroethane	0.59	U	1.0	0.59	ug/L			07/12/23 18:37	1
1,2-Dichloropropane	0.67	U	5.0	0.67	ug/L			07/12/23 18:37	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:37	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:37	1
2-Butanone (MEK)	8.3	U	50	8.3	ug/L			07/12/23 18:37	1
2-Hexanone	7.4	U	50	7.4	ug/L			07/12/23 18:37	1
4-Methyl-2-pentanone	7.5	U	50	7.5	ug/L			07/12/23 18:37	1
Acetone	1.2	U	100	1.2	ug/L			07/12/23 18:37	1
Benzene	0.46	U	1.0	0.46	ug/L			07/12/23 18:37	1
Bromodichloromethane	0.55	U	1.0	0.55	ug/L			07/12/23 18:37	1
Bromoform	0.63	U	5.0	0.63	ug/L			07/12/23 18:37	1
Bromomethane	1.4	U	5.0	1.4	ug/L			07/12/23 18:37	1
Carbon disulfide	1.9	U	5.0	1.9	ug/L			07/12/23 18:37	1
Carbon tetrachloride	0.90	U	5.0	0.90	ug/L			07/12/23 18:37	1
Chlorobenzene	0.53	U	1.0	0.53	ug/L			07/12/23 18:37	1
Chloroethane	2.0	U	10	2.0	ug/L			07/12/23 18:37	1
Chloroform	0.64	U	1.0	0.64	ug/L			07/12/23 18:37	1
Chloromethane	2.0	U	10	2.0	ug/L			07/12/23 18:37	1
cis-1,2-Dichloroethene	0.71	U	1.0	0.71	ug/L			07/12/23 18:37	1
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			07/12/23 18:37	1
Cyclohexane	1.5	U	5.0	1.5	ug/L			07/12/23 18:37	1
Dibromochloromethane	0.55	U	5.0	0.55	ug/L			07/12/23 18:37	1

Client Sample ID: POL-MW0045I-025.0-20230707

Lab Sample ID: 670-22768-2

Date Collected: 07/07/23 09:27

Matrix: Water

Date Received: 07/07/23 16:32

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	0.92	U	1.0	0.92	ug/L			07/12/23 18:37	1
Ethylbenzene	0.41	U	1.0	0.41	ug/L			07/12/23 18:37	1
Isopropylbenzene	0.61	U	1.0	0.61	ug/L			07/12/23 18:37	1
m,p-Xylenes	1.2	U	10	1.2	ug/L			07/12/23 18:37	1
Methyl acetate	4.0	U	20	4.0	ug/L			07/12/23 18:37	1
Methyl tert-butyl ether	1.4	U	5.0	1.4	ug/L			07/12/23 18:37	1
Methylcyclohexane	0.61	U	10	0.61	ug/L			07/12/23 18:37	1
Methylene Chloride	1.7	U	5.0	1.7	ug/L			07/12/23 18:37	1
o-Xylene	0.55	U	1.0	0.55	ug/L			07/12/23 18:37	1
Styrene	0.66	U	1.0	0.66	ug/L			07/12/23 18:37	1
Tetrachloroethene	0.80	U	1.0	0.80	ug/L			07/12/23 18:37	1
Toluene	0.48	U	1.0	0.48	ug/L			07/12/23 18:37	1
trans-1,2-Dichloroethene	0.95	U	1.0	0.95	ug/L			07/12/23 18:37	1
trans-1,3-Dichloropropene	1.3	U	5.0	1.3	ug/L			07/12/23 18:37	1
Trichloroethene	**1.3**	**I**	5.0	0.79	ug/L			07/12/23 18:37	1
Trichlorofluoromethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:37	1
Vinyl chloride	0.64	U	2.0	0.64	ug/L			07/12/23 18:37	1
Xylenes, Total	1.2	U	10	1.2	ug/L			07/12/23 18:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*74 - 124*		*07/12/23 18:37*	*1*
Dibromofluoromethane (Surr)	*106*		*75 - 131*		*07/12/23 18:37*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*07/12/23 18:37*	*1*

Client Sample ID: POL-MW0044D-035.0-20230707

Lab Sample ID: 670-22768-3

Date Collected: 07/07/23 09:53

Matrix: Water

Date Received: 07/07/23 16:32

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	5.0	1.7	ug/L			07/12/23 18:58	1
1,1,2,2-Tetrachloroethane	0.47	U	1.0	0.47	ug/L			07/12/23 18:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	10	3.2	ug/L			07/12/23 18:58	1
1,1,2-Trichloroethane	0.51	U	1.0	0.51	ug/L			07/12/23 18:58	1
1,1-Dichloroethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:58	1
1,1-Dichloroethene	0.74	U	1.0	0.74	ug/L			07/12/23 18:58	1
1,2,4-Trichlorobenzene	1.8	U	5.0	1.8	ug/L			07/12/23 18:58	1
1,2-Dibromo-3-Chloropropane	1.3	U	5.0	1.3	ug/L			07/12/23 18:58	1
1,2-Dibromoethane (EDB)	1.0	U	5.0	1.0	ug/L			07/12/23 18:58	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:58	1
1,2-Dichloroethane	0.59	U	1.0	0.59	ug/L			07/12/23 18:58	1
1,2-Dichloropropane	0.67	U	5.0	0.67	ug/L			07/12/23 18:58	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:58	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 18:58	1
2-Butanone (MEK)	8.3	U	50	8.3	ug/L			07/12/23 18:58	1
2-Hexanone	7.4	U	50	7.4	ug/L			07/12/23 18:58	1
4-Methyl-2-pentanone	7.5	U	50	7.5	ug/L			07/12/23 18:58	1
Acetone	1.2	U	100	1.2	ug/L			07/12/23 18:58	1
Benzene	0.46	U	1.0	0.46	ug/L			07/12/23 18:58	1
Bromodichloromethane	0.55	U	1.0	0.55	ug/L			07/12/23 18:58	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Client Sample ID: POL-MW0044D-035.0-20230707
Date Collected: 07/07/23 09:53
Date Received: 07/07/23 16:32

Lab Sample ID: 670-22768-3
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	0.63	U	5.0	0.63	ug/L			07/12/23 18:58	1
Bromomethane	1.4	U	5.0	1.4	ug/L			07/12/23 18:58	1
Carbon disulfide	1.9	U	5.0	1.9	ug/L			07/12/23 18:58	1
Carbon tetrachloride	0.90	U	5.0	0.90	ug/L			07/12/23 18:58	1
Chlorobenzene	0.53	U	1.0	0.53	ug/L			07/12/23 18:58	1
Chloroethane	2.0	U	10	2.0	ug/L			07/12/23 18:58	1
Chloroform	0.64	U	1.0	0.64	ug/L			07/12/23 18:58	1
Chloromethane	2.0	U	10	2.0	ug/L			07/12/23 18:58	1
cis-1,2-Dichloroethene	**1.4**		1.0	0.71	ug/L			07/12/23 18:58	1
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			07/12/23 18:58	1
Cyclohexane	1.5	U	5.0	1.5	ug/L			07/12/23 18:58	1
Dibromochloromethane	0.55	U	5.0	0.55	ug/L			07/12/23 18:58	1
Dichlorodifluoromethane	0.92	U	1.0	0.92	ug/L			07/12/23 18:58	1
Ethylbenzene	0.41	U	1.0	0.41	ug/L			07/12/23 18:58	1
Isopropylbenzene	0.61	U	1.0	0.61	ug/L			07/12/23 18:58	1
m,p-Xylenes	1.2	U	10	1.2	ug/L			07/12/23 18:58	1
Methyl acetate	4.0	U	20	4.0	ug/L			07/12/23 18:58	1
Methyl tert-butyl ether	1.4	U	5.0	1.4	ug/L			07/12/23 18:58	1
Methylcyclohexane	0.61	U	10	0.61	ug/L			07/12/23 18:58	1
Methylene Chloride	1.7	U	5.0	1.7	ug/L			07/12/23 18:58	1
o-Xylene	0.55	U	1.0	0.55	ug/L			07/12/23 18:58	1
Styrene	0.66	U	1.0	0.66	ug/L			07/12/23 18:58	1
Tetrachloroethene	0.80	U	1.0	0.80	ug/L			07/12/23 18:58	1
Toluene	0.48	U	1.0	0.48	ug/L			07/12/23 18:58	1
trans-1,2-Dichloroethene	0.95	U	1.0	0.95	ug/L			07/12/23 18:58	1
trans-1,3-Dichloropropene	1.3	U	5.0	1.3	ug/L			07/12/23 18:58	1
Trichloroethene	**1.5**	**I**	5.0	0.79	ug/L			07/12/23 18:58	1
Trichlorofluoromethane	0.64	U	1.0	0.64	ug/L			07/12/23 18:58	1
Vinyl chloride	**1.1**	**I**	2.0	0.64	ug/L			07/12/23 18:58	1
Xylenes, Total	1.2	U	10	1.2	ug/L			07/12/23 18:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*107*		*74 - 124*		*07/12/23 18:58*	*1*
Dibromofluoromethane (Surr)	*107*		*75 - 131*		*07/12/23 18:58*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*07/12/23 18:58*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(74-124)	(75-131)	(80-120)
670-22768-1	POL-MW00141D-034.5-202307(	106	79	102
670-22768-1 - RA	POL-MW00141D-034.5-20230707	102	99	106
670-22768-1 MS	POL-MW00141D-034.5-20230707	99	100	99
670-22768-2	POL-MW0045I-025.0-20230707	107	106	101
670-22768-3	POL-MW0044D-035.0-20230707	107	107	104
860-52798-B-10 MS	Matrix Spike	104	104	101
LCS 860-111855/7	Lab Control Sample	105	104	100
LCS 860-112114/1010	Lab Control Sample	100	99	99
LCSD 860-111855/8	Lab Control Sample Dup	104	105	101
LCSD 860-112114/11	Lab Control Sample Dup	100	101	99
MB 860-111855/13	Method Blank	105	108	104
MB 860-112114/15	Method Blank	101	98	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 860-111855/13
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	5.0	1.7	ug/L			07/12/23 14:17	1
1,1,2,2-Tetrachloroethane	0.47	U	1.0	0.47	ug/L			07/12/23 14:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	10	3.2	ug/L			07/12/23 14:17	1
1,1,2-Trichloroethane	0.51	U	1.0	0.51	ug/L			07/12/23 14:17	1
1,1-Dichloroethane	0.64	U	1.0	0.64	ug/L			07/12/23 14:17	1
1,1-Dichloroethene	0.74	U	1.0	0.74	ug/L			07/12/23 14:17	1
1,2,4-Trichlorobenzene	1.8	U	5.0	1.8	ug/L			07/12/23 14:17	1
1,2-Dibromo-3-Chloropropane	1.3	U	5.0	1.3	ug/L			07/12/23 14:17	1
1,2-Dibromoethane (EDB)	1.0	U	5.0	1.0	ug/L			07/12/23 14:17	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 14:17	1
1,2-Dichloroethane	0.59	U	1.0	0.59	ug/L			07/12/23 14:17	1
1,2-Dichloropropane	0.67	U	5.0	0.67	ug/L			07/12/23 14:17	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 14:17	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/12/23 14:17	1
2-Butanone (MEK)	8.3	U	50	8.3	ug/L			07/12/23 14:17	1
2-Hexanone	7.4	U	50	7.4	ug/L			07/12/23 14:17	1
4-Methyl-2-pentanone	7.5	U	50	7.5	ug/L			07/12/23 14:17	1
Acetone	1.2	U	100	1.2	ug/L			07/12/23 14:17	1
Benzene	0.46	U	1.0	0.46	ug/L			07/12/23 14:17	1
Bromodichloromethane	0.55	U	1.0	0.55	ug/L			07/12/23 14:17	1
Bromoform	0.63	U	5.0	0.63	ug/L			07/12/23 14:17	1
Bromomethane	1.4	U	5.0	1.4	ug/L			07/12/23 14:17	1
Carbon disulfide	1.9	U	5.0	1.9	ug/L			07/12/23 14:17	1
Carbon tetrachloride	0.90	U	5.0	0.90	ug/L			07/12/23 14:17	1
Chlorobenzene	0.53	U	1.0	0.53	ug/L			07/12/23 14:17	1
Chloroethane	2.0	U	10	2.0	ug/L			07/12/23 14:17	1
Chloroform	0.64	U	1.0	0.64	ug/L			07/12/23 14:17	1
Chloromethane	2.0	U	10	2.0	ug/L			07/12/23 14:17	1
cis-1,2-Dichloroethene	0.71	U	1.0	0.71	ug/L			07/12/23 14:17	1
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			07/12/23 14:17	1
Cyclohexane	1.5	U	5.0	1.5	ug/L			07/12/23 14:17	1
Dibromochloromethane	0.55	U	5.0	0.55	ug/L			07/12/23 14:17	1
Dichlorodifluoromethane	0.92	U	1.0	0.92	ug/L			07/12/23 14:17	1
Ethylbenzene	0.41	U	1.0	0.41	ug/L			07/12/23 14:17	1
Isopropylbenzene	0.61	U	1.0	0.61	ug/L			07/12/23 14:17	1
m,p-Xylenes	1.2	U	10	1.2	ug/L			07/12/23 14:17	1
Methyl acetate	4.0	U	20	4.0	ug/L			07/12/23 14:17	1
Methyl tert-butyl ether	1.4	U	5.0	1.4	ug/L			07/12/23 14:17	1
Methylcyclohexane	0.61	U	10	0.61	ug/L			07/12/23 14:17	1
Methylene Chloride	1.7	U	5.0	1.7	ug/L			07/12/23 14:17	1
o-Xylene	0.55	U	1.0	0.55	ug/L			07/12/23 14:17	1
Styrene	0.66	U	1.0	0.66	ug/L			07/12/23 14:17	1
Tetrachloroethene	0.80	U	1.0	0.80	ug/L			07/12/23 14:17	1
Toluene	0.48	U	1.0	0.48	ug/L			07/12/23 14:17	1
trans-1,2-Dichloroethene	0.95	U	1.0	0.95	ug/L			07/12/23 14:17	1
trans-1,3-Dichloropropene	1.3	U	5.0	1.3	ug/L			07/12/23 14:17	1
Trichloroethene	0.79	U	5.0	0.79	ug/L			07/12/23 14:17	1
Trichlorofluoromethane	0.64	U	1.0	0.64	ug/L			07/12/23 14:17	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-111855/13
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.64	U	2.0	0.64	ug/L			07/12/23 14:17	1
Xylenes, Total	1.2	U	10	1.2	ug/L			07/12/23 14:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*105*		*74 - 124*		*07/12/23 14:17*	*1*
Dibromofluoromethane (Surr)	*108*		*75 - 131*		*07/12/23 14:17*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*07/12/23 14:17*	*1*

Lab Sample ID: LCS 860-111855/7
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	56.5		ug/L		113	70 - 130
1,1,2,2-Tetrachloroethane	50.0	49.4		ug/L		99	74 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.9		ug/L		98	60 - 140
1,1,2-Trichloroethane	50.0	51.1		ug/L		102	70 - 130
1,1-Dichloroethane	50.0	56.5		ug/L		113	70 - 130
1,1-Dichloroethene	50.0	50.8		ug/L		102	50 - 150
1,2,4-Trichlorobenzene	50.0	52.2		ug/L		104	75 - 135
1,2-Dibromo-3-Chloropropane	50.0	49.3		ug/L		99	59 - 125
1,2-Dibromoethane (EDB)	50.0	50.2		ug/L		100	73 - 125
1,2-Dichlorobenzene	50.0	52.2		ug/L		104	75 - 125
1,2-Dichloroethane	50.0	55.3		ug/L		111	72 - 130
1,2-Dichloropropane	50.0	54.6		ug/L		109	74 - 125
1,3-Dichlorobenzene	50.0	52.6		ug/L		105	75 - 125
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	75 - 125
2-Butanone (MEK)	250	235		ug/L		94	60 - 140
2-Hexanone	250	270		ug/L		108	60 - 140
4-Methyl-2-pentanone	250	271		ug/L		108	60 - 140
Acetone	250	244		ug/L		98	60 - 140
Benzene	50.0	51.2		ug/L		102	75 - 125
Bromodichloromethane	50.0	55.5		ug/L		111	75 - 125
Bromoform	50.0	48.7		ug/L		97	70 - 130
Bromomethane	50.0	43.3		ug/L		87	60 - 140
Carbon disulfide	50.0	50.8		ug/L		102	60 - 140
Carbon tetrachloride	50.0	54.8		ug/L		110	70 - 130
Chlorobenzene	50.0	52.5		ug/L		105	65 - 135
Chloroethane	50.0	45.6		ug/L		91	60 - 140
Chloroform	50.0	57.7		ug/L		115	70 - 121
Chloromethane	50.0	41.6		ug/L		83	60 - 140
cis-1,2-Dichloroethene	50.0	57.2		ug/L		114	75 - 125
cis-1,3-Dichloropropene	50.0	55.9		ug/L		112	74 - 125
Cyclohexane	50.0	51.2		ug/L		102	70 - 130
Dibromochloromethane	50.0	51.7		ug/L		103	73 - 125
Dichlorodifluoromethane	50.0	36.1		ug/L		72	50 - 150
Ethylbenzene	50.0	55.1		ug/L		110	75 - 125
Isopropylbenzene	50.0	54.9		ug/L		110	75 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-111855/7
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	50.0	55.6		ug/L		111	75 - 125
Methyl acetate	100	102		ug/L		102	60 - 140
Methyl tert-butyl ether	50.0	52.6		ug/L		105	65 - 135
Methylcyclohexane	50.0	54.2		ug/L		108	75 - 125
Methylene Chloride	50.0	48.6		ug/L		97	71 - 125
o-Xylene	50.0	55.8		ug/L		112	75 - 125
Styrene	50.0	54.9		ug/L		110	75 - 125
Tetrachloroethene	50.0	49.7		ug/L		99	71 - 125
Toluene	50.0	53.5		ug/L		107	70 - 130
trans-1,2-Dichloroethene	50.0	52.3		ug/L		105	75 - 125
trans-1,3-Dichloropropene	50.0	55.9		ug/L		112	66 - 125
Trichloroethene	50.0	54.3		ug/L		109	75 - 135
Trichlorofluoromethane	50.0	50.3		ug/L		101	60 - 140
Vinyl chloride	50.0	44.0		ug/L		88	60 - 140
Xylenes, Total	100	111		ug/L		111	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*105*		*74 - 124*
Dibromofluoromethane (Surr)	*104*		*75 - 131*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: LCSD 860-111855/8
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	56.1		ug/L		112	70 - 130	1	25
1,1,2,2-Tetrachloroethane	50.0	47.7		ug/L		95	74 - 125	4	25
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.6		ug/L		97	60 - 140	1	25
1,1,2-Trichloroethane	50.0	50.7		ug/L		101	70 - 130	1	25
1,1-Dichloroethane	50.0	56.0		ug/L		112	70 - 130	1	25
1,1-Dichloroethene	50.0	50.6		ug/L		101	50 - 150	0	25
1,2,4-Trichlorobenzene	50.0	51.6		ug/L		103	75 - 135	1	25
1,2-Dibromo-3-Chloropropane	50.0	49.5		ug/L		99	59 - 125	0	25
1,2-Dibromoethane (EDB)	50.0	50.1		ug/L		100	73 - 125	0	25
1,2-Dichlorobenzene	50.0	51.0		ug/L		102	75 - 125	2	25
1,2-Dichloroethane	50.0	55.2		ug/L		110	72 - 130	0	25
1,2-Dichloropropane	50.0	53.6		ug/L		107	74 - 125	2	25
1,3-Dichlorobenzene	50.0	51.3		ug/L		103	75 - 125	2	25
1,4-Dichlorobenzene	50.0	50.4		ug/L		101	75 - 125	2	25
2-Butanone (MEK)	250	235		ug/L		94	60 - 140	0	25
2-Hexanone	250	271		ug/L		108	60 - 140	0	25
4-Methyl-2-pentanone	250	264		ug/L		106	60 - 140	2	25
Acetone	250	246		ug/L		98	60 - 140	1	25
Benzene	50.0	52.4		ug/L		105	75 - 125	2	25
Bromodichloromethane	50.0	53.8		ug/L		108	75 - 125	3	25
Bromoform	50.0	47.3		ug/L		95	70 - 130	3	25
Bromomethane	50.0	44.1		ug/L		88	60 - 140	2	25

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-111855/8
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon disulfide			50.0	49.7		ug/L		99	60 - 140	2	25
Carbon tetrachloride			50.0	53.6		ug/L		107	70 - 130	2	25
Chlorobenzene			50.0	52.4		ug/L		105	65 - 135	0	25
Chloroethane			50.0	46.1		ug/L		92	60 - 140	1	25
Chloroform			50.0	58.3		ug/L		117	70 - 121	1	25
Chloromethane			50.0	41.5		ug/L		83	60 - 140	0	25
cis-1,2-Dichloroethene			50.0	57.7		ug/L		115	75 - 125	1	25
cis-1,3-Dichloropropene			50.0	54.2		ug/L		108	74 - 125	3	25
Cyclohexane			50.0	50.0		ug/L		100	70 - 130	2	25
Dibromochloromethane			50.0	51.4		ug/L		103	73 - 125	1	25
Dichlorodifluoromethane			50.0	36.3		ug/L		73	50 - 150	1	25
Ethylbenzene			50.0	54.4		ug/L		109	75 - 125	1	25
Isopropylbenzene			50.0	54.5		ug/L		109	75 - 125	1	25
m,p-Xylenes			50.0	55.0		ug/L		110	75 - 125	1	25
Methyl acetate			100	101		ug/L		101	60 - 140	1	25
Methyl tert-butyl ether			50.0	52.8		ug/L		106	65 - 135	0	25
Methylcyclohexane			50.0	52.6		ug/L		105	75 - 125	3	25
Methylene Chloride			50.0	48.2		ug/L		96	71 - 125	1	25
o-Xylene			50.0	55.3		ug/L		111	75 - 125	1	25
Styrene			50.0	54.1		ug/L		108	75 - 125	1	25
Tetrachloroethene			50.0	49.0		ug/L		98	71 - 125	2	25
Toluene			50.0	52.9		ug/L		106	70 - 130	1	25
trans-1,2-Dichloroethene			50.0	51.8		ug/L		104	75 - 125	1	25
trans-1,3-Dichloropropene			50.0	55.9		ug/L		112	66 - 125	0	25
Trichloroethene			50.0	53.3		ug/L		107	75 - 135	2	25
Trichlorofluoromethane			50.0	48.5		ug/L		97	60 - 140	4	25
Vinyl chloride			50.0	44.3		ug/L		89	60 - 140	1	25
Xylenes, Total			100	110		ug/L		110	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*74 - 124*
Dibromofluoromethane (Surr)	*105*		*75 - 131*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 860-52798-B-10 MS
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.7	U	50.0	52.5		ug/L		105	75 - 125
1,1,2,2-Tetrachloroethane	0.47	U	50.0	48.8		ug/L		98	74 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	50.0	45.8		ug/L		92	60 - 140
1,1,2-Trichloroethane	0.51	U	50.0	49.7		ug/L		99	75 - 127
1,1-Dichloroethane	0.64	U	50.0	53.9		ug/L		108	72 - 125
1,1-Dichloroethene	0.74	U	50.0	48.0		ug/L		96	59 - 172
1,2,4-Trichlorobenzene	1.8	U	50.0	51.0		ug/L		102	75 - 135
1,2-Dibromo-3-Chloropropane	1.3	U	50.0	49.2		ug/L		98	59 - 125
1,2-Dibromoethane (EDB)	1.0	U	50.0	49.6		ug/L		99	73 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 860-52798-B-10 MS
Matrix: Water
Analysis Batch: 111855

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	0.51	U	50.0	49.5		ug/L		99	75 - 125
1,2-Dichloroethane	0.59	U J3	50.0	85.4	J3	ug/L		171	68 - 127
1,2-Dichloropropane	0.67	U J3	50.0	80.9	J3	ug/L		162	74 - 125
1,3-Dichlorobenzene	0.51	U	50.0	49.9		ug/L		100	75 - 125
1,4-Dichlorobenzene	0.51	U	50.0	48.8		ug/L		98	75 - 125
2-Butanone (MEK)	8.3	U	250	232		ug/L		93	60 - 140
2-Hexanone	7.4	U	250	268		ug/L		107	60 - 140
4-Methyl-2-pentanone	7.5	U J3	250	437	J3	ug/L		175	60 - 140
Acetone	1.2	U	250	222		ug/L		89	60 - 140
Benzene	0.46	U J3	50.0	77.4	J3	ug/L		155	66 - 142
Bromodichloromethane	0.55	U J3	50.0	84.8	J3	ug/L		170	75 - 125
Bromoform	0.63	U	50.0	47.2		ug/L		94	75 - 125
Bromomethane	1.4	U	50.0	42.4		ug/L		85	60 - 140
Carbon disulfide	1.9	U	50.0	47.2		ug/L		94	60 - 140
Carbon tetrachloride	0.90	U	50.0	51.7		ug/L		103	62 - 125
Chlorobenzene	0.53	U	50.0	49.9		ug/L		100	60 - 133
Chloroethane	2.0	U	50.0	43.3		ug/L		87	60 - 140
Chloroform	1.4		50.0	55.8		ug/L		109	70 - 130
Chloromethane	2.0	U	50.0	38.4		ug/L		77	60 - 140
cis-1,2-Dichloroethene	0.71	U	50.0	57.4		ug/L		115	75 - 125
cis-1,3-Dichloropropene	1.1	U J3	50.0	85.9	J3	ug/L		172	74 - 125
Cyclohexane	1.5	U	50.0	45.8		ug/L		92	70 - 130
Dibromochloromethane	0.55	U	50.0	49.8		ug/L		100	73 - 125
Dichlorodifluoromethane	0.92	U J3	50.0	30.4	J3	ug/L		61	70 - 130
Ethylbenzene	0.41	U	50.0	51.7		ug/L		103	75 - 125
Isopropylbenzene	0.61	U	50.0	51.7		ug/L		103	75 - 125
m,p-Xylenes	1.2	U	50.0	52.0		ug/L		104	75 - 125
Methyl acetate	4.0	U	100	104		ug/L		104	60 - 140
Methyl tert-butyl ether	1.4	U	50.0	52.8		ug/L		106	65 - 135
Methylcyclohexane	0.61	U J3	50.0	73.2	J3	ug/L		146	75 - 125
Methylene Chloride	1.7	U	50.0	46.8		ug/L		94	75 - 125
o-Xylene	0.55	U	50.0	52.1		ug/L		104	75 - 125
Styrene	0.66	U	50.0	50.9		ug/L		102	75 - 125
Tetrachloroethene	0.80	U	50.0	46.1		ug/L		92	71 - 125
Toluene	0.48	U	50.0	50.0		ug/L		100	59 - 139
trans-1,2-Dichloroethene	0.95	U	50.0	50.2		ug/L		100	75 - 125
trans-1,3-Dichloropropene	1.3	U	50.0	54.7		ug/L		109	66 - 125
Trichloroethene	0.79	U	50.0	52.6		ug/L		105	62 - 137
Trichlorofluoromethane	0.64	U	50.0	48.1		ug/L		96	60 - 140
Vinyl chloride	0.64	U	50.0	41.2		ug/L		82	60 - 140
Xylenes, Total	1.2	U	100	104		ug/L		104	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*104*		*74 - 124*
Dibromofluoromethane (Surr)	*104*		*75 - 131*
Toluene-d8 (Surr)	*101*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-112114/15
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	1.7	U	5.0	1.7	ug/L			07/13/23 14:54	1
1,1,2,2-Tetrachloroethane	0.47	U	1.0	0.47	ug/L			07/13/23 14:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	10	3.2	ug/L			07/13/23 14:54	1
1,1,2-Trichloroethane	0.51	U	1.0	0.51	ug/L			07/13/23 14:54	1
1,1-Dichloroethane	0.64	U	1.0	0.64	ug/L			07/13/23 14:54	1
1,1-Dichloroethene	0.74	U	1.0	0.74	ug/L			07/13/23 14:54	1
1,2,4-Trichlorobenzene	1.8	U	5.0	1.8	ug/L			07/13/23 14:54	1
1,2-Dibromo-3-Chloropropane	1.3	U	5.0	1.3	ug/L			07/13/23 14:54	1
1,2-Dibromoethane (EDB)	1.0	U	5.0	1.0	ug/L			07/13/23 14:54	1
1,2-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/13/23 14:54	1
1,2-Dichloroethane	0.59	U	1.0	0.59	ug/L			07/13/23 14:54	1
1,2-Dichloropropane	0.67	U	5.0	0.67	ug/L			07/13/23 14:54	1
1,3-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/13/23 14:54	1
1,4-Dichlorobenzene	0.51	U	1.0	0.51	ug/L			07/13/23 14:54	1
2-Butanone (MEK)	8.3	U	50	8.3	ug/L			07/13/23 14:54	1
2-Hexanone	7.4	U	50	7.4	ug/L			07/13/23 14:54	1
4-Methyl-2-pentanone	7.5	U	50	7.5	ug/L			07/13/23 14:54	1
Acetone	1.2	U	100	1.2	ug/L			07/13/23 14:54	1
Benzene	0.46	U	1.0	0.46	ug/L			07/13/23 14:54	1
Bromodichloromethane	0.55	U	1.0	0.55	ug/L			07/13/23 14:54	1
Bromoform	0.63	U	5.0	0.63	ug/L			07/13/23 14:54	1
Bromomethane	1.4	U	5.0	1.4	ug/L			07/13/23 14:54	1
Carbon disulfide	1.9	U	5.0	1.9	ug/L			07/13/23 14:54	1
Carbon tetrachloride	0.90	U	5.0	0.90	ug/L			07/13/23 14:54	1
Chlorobenzene	0.53	U	1.0	0.53	ug/L			07/13/23 14:54	1
Chloroethane	2.0	U	10	2.0	ug/L			07/13/23 14:54	1
Chloroform	0.64	U	1.0	0.64	ug/L			07/13/23 14:54	1
Chloromethane	2.0	U	10	2.0	ug/L			07/13/23 14:54	1
cis-1,2-Dichloroethene	0.71	U	1.0	0.71	ug/L			07/13/23 14:54	1
cis-1,3-Dichloropropene	1.1	U	5.0	1.1	ug/L			07/13/23 14:54	1
Cyclohexane	1.5	U	5.0	1.5	ug/L			07/13/23 14:54	1
Dibromochloromethane	0.55	U	5.0	0.55	ug/L			07/13/23 14:54	1
Dichlorodifluoromethane	0.92	U	1.0	0.92	ug/L			07/13/23 14:54	1
Ethylbenzene	0.41	U	1.0	0.41	ug/L			07/13/23 14:54	1
Isopropylbenzene	0.61	U	1.0	0.61	ug/L			07/13/23 14:54	1
m,p-Xylenes	1.2	U	10	1.2	ug/L			07/13/23 14:54	1
Methyl acetate	4.0	U	20	4.0	ug/L			07/13/23 14:54	1
Methyl tert-butyl ether	1.4	U	5.0	1.4	ug/L			07/13/23 14:54	1
Methylcyclohexane	0.61	U	10	0.61	ug/L			07/13/23 14:54	1
Methylene Chloride	1.7	U	5.0	1.7	ug/L			07/13/23 14:54	1
o-Xylene	0.55	U	1.0	0.55	ug/L			07/13/23 14:54	1
Styrene	0.66	U	1.0	0.66	ug/L			07/13/23 14:54	1
Tetrachloroethene	0.80	U	1.0	0.80	ug/L			07/13/23 14:54	1
Toluene	0.48	U	1.0	0.48	ug/L			07/13/23 14:54	1
trans-1,2-Dichloroethene	0.95	U	1.0	0.95	ug/L			07/13/23 14:54	1
trans-1,3-Dichloropropene	1.3	U	5.0	1.3	ug/L			07/13/23 14:54	1
Trichloroethene	0.79	U	5.0	0.79	ug/L			07/13/23 14:54	1
Trichlorofluoromethane	0.64	U	1.0	0.64	ug/L			07/13/23 14:54	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 860-112114/15
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.64	U	2.0	0.64	ug/L			07/13/23 14:54	1
Xylenes, Total	1.2	U	10	1.2	ug/L			07/13/23 14:54	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*74 - 124*		*07/13/23 14:54*	*1*
Dibromofluoromethane (Surr)	*98*		*75 - 131*		*07/13/23 14:54*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*07/13/23 14:54*	*1*

Lab Sample ID: LCS 860-112114/1010
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	56.8		ug/L		114	70 - 130
1,1,2,2-Tetrachloroethane	50.0	53.0		ug/L		106	74 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	49.4		ug/L		99	60 - 140
1,1,2-Trichloroethane	50.0	54.1		ug/L		108	70 - 130
1,1-Dichloroethane	50.0	57.1		ug/L		114	70 - 130
1,1-Dichloroethene	50.0	58.4		ug/L		117	50 - 150
1,2,4-Trichlorobenzene	50.0	53.2		ug/L		106	75 - 135
1,2-Dibromo-3-Chloropropane	50.0	53.9		ug/L		108	59 - 125
1,2-Dibromoethane (EDB)	50.0	55.2		ug/L		110	73 - 125
1,2-Dichlorobenzene	50.0	53.2		ug/L		106	75 - 125
1,2-Dichloroethane	50.0	54.5		ug/L		109	72 - 130
1,2-Dichloropropane	50.0	57.0		ug/L		114	74 - 125
1,3-Dichlorobenzene	50.0	53.3		ug/L		107	75 - 125
1,4-Dichlorobenzene	50.0	53.0		ug/L		106	75 - 125
2-Butanone (MEK)	250	240		ug/L		96	60 - 140
2-Hexanone	250	252		ug/L		101	60 - 140
4-Methyl-2-pentanone	250	256		ug/L		102	60 - 140
Acetone	250	258		ug/L		103	60 - 140
Benzene	50.0	55.8		ug/L		112	75 - 125
Bromodichloromethane	50.0	54.9		ug/L		110	75 - 125
Bromoform	50.0	53.8		ug/L		108	70 - 130
Bromomethane	50.0	44.9		ug/L		90	60 - 140
Carbon disulfide	50.0	54.4		ug/L		109	60 - 140
Carbon tetrachloride	50.0	55.4		ug/L		111	70 - 130
Chlorobenzene	50.0	53.8		ug/L		108	65 - 135
Chloroethane	50.0	54.4		ug/L		109	60 - 140
Chloroform	50.0	57.0		ug/L		114	70 - 121
Chloromethane	50.0	49.9		ug/L		100	60 - 140
cis-1,2-Dichloroethene	50.0	55.3		ug/L		111	75 - 125
cis-1,3-Dichloropropene	50.0	54.7		ug/L		109	74 - 125
Cyclohexane	50.0	51.1		ug/L		102	70 - 130
Dibromochloromethane	50.0	53.2		ug/L		106	73 - 125
Dichlorodifluoromethane	50.0	46.9		ug/L		94	50 - 150
Ethylbenzene	50.0	54.2		ug/L		108	75 - 125
Isopropylbenzene	50.0	54.4		ug/L		109	75 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 860-112114/1010
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
m,p-Xylenes	50.0	54.6		ug/L		109	75 - 125
Methyl acetate	100	97.4		ug/L		97	60 - 140
Methyl tert-butyl ether	50.0	54.5		ug/L		109	65 - 135
Methylcyclohexane	50.0	55.5		ug/L		111	75 - 125
Methylene Chloride	50.0	53.2		ug/L		106	71 - 125
o-Xylene	50.0	54.9		ug/L		110	75 - 125
Styrene	50.0	55.2		ug/L		110	75 - 125
Tetrachloroethene	50.0	54.8		ug/L		110	71 - 125
Toluene	50.0	54.5		ug/L		109	70 - 130
trans-1,2-Dichloroethene	50.0	58.1		ug/L		116	75 - 125
trans-1,3-Dichloropropene	50.0	54.9		ug/L		110	66 - 125
Trichloroethene	50.0	57.2		ug/L		114	75 - 135
Trichlorofluoromethane	50.0	53.0		ug/L		106	60 - 140
Vinyl chloride	50.0	51.6		ug/L		103	60 - 140
Xylenes, Total	100	110		ug/L		110	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*74 - 124*
Dibromofluoromethane (Surr)	*99*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: LCSD 860-112114/11
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane	50.0	56.4		ug/L		113	70 - 130	1	25
1,1,2,2-Tetrachloroethane	50.0	50.5		ug/L		101	74 - 125	5	25
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.0		ug/L		94	60 - 140	5	25
1,1,2-Trichloroethane	50.0	52.6		ug/L		105	70 - 130	3	25
1,1-Dichloroethane	50.0	56.7		ug/L		113	70 - 130	1	25
1,1-Dichloroethene	50.0	56.1		ug/L		112	50 - 150	4	25
1,2,4-Trichlorobenzene	50.0	52.2		ug/L		104	75 - 135	2	25
1,2-Dibromo-3-Chloropropane	50.0	51.7		ug/L		103	59 - 125	4	25
1,2-Dibromoethane (EDB)	50.0	53.1		ug/L		106	73 - 125	4	25
1,2-Dichlorobenzene	50.0	51.8		ug/L		104	75 - 125	3	25
1,2-Dichloroethane	50.0	53.4		ug/L		107	72 - 130	2	25
1,2-Dichloropropane	50.0	55.1		ug/L		110	74 - 125	3	25
1,3-Dichlorobenzene	50.0	51.9		ug/L		104	75 - 125	3	25
1,4-Dichlorobenzene	50.0	51.5		ug/L		103	75 - 125	3	25
2-Butanone (MEK)	250	238		ug/L		95	60 - 140	1	25
2-Hexanone	250	240		ug/L		96	60 - 140	5	25
4-Methyl-2-pentanone	250	245		ug/L		98	60 - 140	4	25
Acetone	250	254		ug/L		101	60 - 140	2	25
Benzene	50.0	54.7		ug/L		109	75 - 125	2	25
Bromodichloromethane	50.0	53.1		ug/L		106	75 - 125	3	25
Bromoform	50.0	51.8		ug/L		104	70 - 130	4	25
Bromomethane	50.0	45.6		ug/L		91	60 - 140	1	25

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 860-112114/11
Matrix: Water
Analysis Batch: 112114

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Carbon disulfide			50.0	53.4		ug/L		107	60 - 140	2	25
Carbon tetrachloride			50.0	53.2		ug/L		106	70 - 130	4	25
Chlorobenzene			50.0	52.6		ug/L		105	65 - 135	2	25
Chloroethane			50.0	54.8		ug/L		110	60 - 140	1	25
Chloroform			50.0	56.5		ug/L		113	70 - 121	1	25
Chloromethane			50.0	50.1		ug/L		100	60 - 140	0	25
cis-1,2-Dichloroethene			50.0	54.7		ug/L		109	75 - 125	1	25
cis-1,3-Dichloropropene			50.0	53.5		ug/L		107	74 - 125	2	25
Cyclohexane			50.0	49.6		ug/L		99	70 - 130	3	25
Dibromochloromethane			50.0	51.6		ug/L		103	73 - 125	3	25
Dichlorodifluoromethane			50.0	48.3		ug/L		97	50 - 150	3	25
Ethylbenzene			50.0	52.8		ug/L		106	75 - 125	3	25
Isopropylbenzene			50.0	52.9		ug/L		106	75 - 125	3	25
m,p-Xylenes			50.0	53.4		ug/L		107	75 - 125	2	25
Methyl acetate			100	97.9		ug/L		98	60 - 140	1	25
Methyl tert-butyl ether			50.0	52.5		ug/L		105	65 - 135	4	25
Methylcyclohexane			50.0	53.5		ug/L		107	75 - 125	4	25
Methylene Chloride			50.0	53.7		ug/L		107	71 - 125	1	25
o-Xylene			50.0	53.0		ug/L		106	75 - 125	4	25
Styrene			50.0	53.7		ug/L		107	75 - 125	3	25
Tetrachloroethene			50.0	54.1		ug/L		108	71 - 125	1	25
Toluene			50.0	53.3		ug/L		107	70 - 130	2	25
trans-1,2-Dichloroethene			50.0	56.3		ug/L		113	75 - 125	3	25
trans-1,3-Dichloropropene			50.0	53.3		ug/L		107	66 - 125	3	25
Trichloroethene			50.0	56.5		ug/L		113	75 - 135	1	25
Trichlorofluoromethane			50.0	56.0		ug/L		112	60 - 140	5	25
Vinyl chloride			50.0	51.9		ug/L		104	60 - 140	1	25
Xylenes, Total			100	106		ug/L		106	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*74 - 124*
Dibromofluoromethane (Surr)	*101*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

Lab Sample ID: 670-22768-1 MS
Matrix: Water
Analysis Batch: 112114

Client Sample ID: POL-MW00141D-034.5-20230707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	1.7	U	50.0	55.6		ug/L		111	75 - 125
1,1,2,2-Tetrachloroethane	0.47	U	50.0	51.7		ug/L		103	74 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	3.2	U	50.0	48.1		ug/L		96	60 - 140
1,1,2-Trichloroethane	0.51	U	50.0	54.2		ug/L		108	75 - 127
1,1-Dichloroethane	0.64	U	50.0	55.3		ug/L		111	72 - 125
1,1-Dichloroethene	0.74	U	50.0	56.2		ug/L		112	59 - 172
1,2,4-Trichlorobenzene	1.8	U	50.0	53.2		ug/L		106	75 - 135
1,2-Dibromo-3-Chloropropane	1.3	U	50.0	51.8		ug/L		104	59 - 125
1,2-Dibromoethane (EDB)	1.0	U	50.0	53.7		ug/L		107	73 - 125

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 670-22768-1 MS
Matrix: Water
Analysis Batch: 112114

Client Sample ID: POL-MW00141D-034.5-20230707
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dichlorobenzene	0.51	U	50.0	52.3		ug/L		105	75 - 125
1,2-Dichloroethane	0.59	U	50.0	53.3		ug/L		107	68 - 127
1,2-Dichloropropane	0.67	U	50.0	55.4		ug/L		111	74 - 125
1,3-Dichlorobenzene	0.51	U	50.0	52.7		ug/L		105	75 - 125
1,4-Dichlorobenzene	0.51	U	50.0	52.4		ug/L		105	75 - 125
2-Butanone (MEK)	8.3	U	250	230		ug/L		92	60 - 140
2-Hexanone	7.4	U	250	243		ug/L		97	60 - 140
4-Methyl-2-pentanone	7.5	U	250	249		ug/L		100	60 - 140
Acetone	1.2	U	250	250		ug/L		100	60 - 140
Benzene	0.46	U	50.0	54.9		ug/L		110	66 - 142
Bromodichloromethane	0.55	U	50.0	53.8		ug/L		108	75 - 125
Bromoform	0.63	U	50.0	51.8		ug/L		104	75 - 125
Bromomethane	1.4	U	50.0	42.2		ug/L		84	60 - 140
Carbon disulfide	1.9	U	50.0	53.0		ug/L		106	60 - 140
Carbon tetrachloride	0.90	U	50.0	53.4		ug/L		107	62 - 125
Chlorobenzene	0.53	U	50.0	53.1		ug/L		106	60 - 133
Chloroethane	2.0	U	50.0	52.0		ug/L		104	60 - 140
Chloroform	0.64	U	50.0	55.4		ug/L		111	70 - 130
Chloromethane	2.0	U	50.0	48.1		ug/L		96	60 - 140
cis-1,2-Dichloroethene	0.71	U	50.0	54.7		ug/L		109	75 - 125
cis-1,3-Dichloropropene	1.1	U	50.0	54.8		ug/L		110	74 - 125
Cyclohexane	1.5	U	50.0	51.8		ug/L		104	70 - 130
Dibromochloromethane	0.55	U	50.0	51.9		ug/L		104	73 - 125
Dichlorodifluoromethane	0.92	U	50.0	47.6		ug/L		95	70 - 130
Ethylbenzene	0.41	U	50.0	53.2		ug/L		106	75 - 125
Isopropylbenzene	0.61	U	50.0	53.4		ug/L		107	75 - 125
m,p-Xylenes	1.2	U	50.0	53.6		ug/L		107	75 - 125
Methyl acetate	4.0	U	100	92.6		ug/L		93	60 - 140
Methyl tert-butyl ether	1.4	U	50.0	55.2		ug/L		110	65 - 135
Methylcyclohexane	0.61	U	50.0	56.2		ug/L		112	75 - 125
Methylene Chloride	1.7	U	50.0	51.2		ug/L		102	75 - 125
o-Xylene	0.55	U	50.0	53.3		ug/L		107	75 - 125
Styrene	0.66	U	50.0	54.6		ug/L		109	75 - 125
Tetrachloroethene	0.80	U	50.0	55.1		ug/L		110	71 - 125
Toluene	0.48	U	50.0	53.6		ug/L		107	59 - 139
trans-1,2-Dichloroethene	0.95	U	50.0	58.6		ug/L		117	75 - 125
trans-1,3-Dichloropropene	1.3	U	50.0	54.3		ug/L		109	66 - 125
Trichloroethene	0.79	U	50.0	56.9		ug/L		114	62 - 137
Trichlorofluoromethane	0.64	U	50.0	54.9		ug/L		110	60 - 140
Vinyl chloride	0.64	U	50.0	49.4		ug/L		99	60 - 140
Xylenes, Total	1.2	U	100	107		ug/L		107	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*99*		*74 - 124*
Dibromofluoromethane (Surr)	*100*		*75 - 131*
Toluene-d8 (Surr)	*99*		*80 - 120*

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

GC/MS VOA

Analysis Batch: 111855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22768-1	POL-MW00141D-034.5-20230707	Total/NA	Water	8260D	
670-22768-2	POL-MW0045I-025.0-20230707	Total/NA	Water	8260D	
670-22768-3	POL-MW0044D-035.0-20230707	Total/NA	Water	8260D	
MB 860-111855/13	Method Blank	Total/NA	Water	8260D	
LCS 860-111855/7	Lab Control Sample	Total/NA	Water	8260D	
LCSD 860-111855/8	Lab Control Sample Dup	Total/NA	Water	8260D	
860-52798-B-10 MS	Matrix Spike	Total/NA	Water	8260D	

Analysis Batch: 112114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22768-1 - RA	POL-MW00141D-034.5-20230707	Total/NA	Water	8260D	
MB 860-112114/15	Method Blank	Total/NA	Water	8260D	
LCS 860-112114/1010	Lab Control Sample	Total/NA	Water	8260D	
LCSD 860-112114/11	Lab Control Sample Dup	Total/NA	Water	8260D	
670-22768-1 MS	POL-MW00141D-034.5-20230707	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Client Sample ID: POL-MW00141D-034.5-20230707

Lab Sample ID: 670-22768-1

Date Collected: 07/07/23 08:57
Matrix: Water
Date Received: 07/07/23 16:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	111855	AN	EET HOU	07/12/23 18:17
Total/NA	Analysis	8260D	RA	1	112114	AN	EET HOU	07/13/23 15:56

Client Sample ID: POL-MW0045I-025.0-20230707

Lab Sample ID: 670-22768-2

Date Collected: 07/07/23 09:27
Matrix: Water
Date Received: 07/07/23 16:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	111855	AN	EET HOU	07/12/23 18:37

Client Sample ID: POL-MW0044D-035.0-20230707

Lab Sample ID: 670-22768-3

Date Collected: 07/07/23 09:53
Matrix: Water
Date Received: 07/07/23 16:32

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	111855	AN	EET HOU	07/12/23 18:58

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Laboratory: Eurofins Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E871002	06-30-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260D		Water	Cyclohexane

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET HOU
5030C	Purge and Trap	SW846	EET HOU

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET HOU = Eurofins Houston, 4145 Greenbriar Dr, Stafford, TX 77477, TEL (281)240-4200

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC POL

Job ID: 670-22768-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-22768-1	POL-MW00141D-034.5-20230707	Water	07/07/23 08:57	07/07/23 16:32
670-22768-2	POL-MW0045I-025.0-20230707	Water	07/07/23 09:27	07/07/23 16:32
670-22768-3	POL-MW0044D-035.0-20230707	Water	07/07/23 09:53	07/07/23 16:32

TETRA TECH

CHAIN OF CUSTODY

NO.

Project No: 112G09020	Facility: NASA KSC	Project Manger: Mark Jonnet	Phone: (412) 921-8622
Samplers: Natalie Fabbri, Natalie Volk -		Field Ops. Leader: Chuck Sorden	Phone: (321) 591-7580
		Fed Ex Airbill Number:	

Laboratory Name and Contact: Eurofins Kaitlin Dylnicki

Address: 481 Newburyport Ave

City, State, Zip: Altamonte Springs, FL 32701

Date Year: 2023	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	Container Type: Plastic (P) or Glass (G)		Comments
										Preservative Used:		
										8260 (MOD) NASA POL Custom	8260 (MOD) NASA POL Custom	
										G HCl/ice	G ice	
	0857	POL-MW00141D-034.5-20230707	707	32	37	GW	G	4		2	2	
	0927	POL-MW00451-025.0-20230707	707	20	30	GW	G	4		2	2	
	0953	POL-MW0044D-035.0-20230707	707	30	40	GW	G	4		2	2	

670-22768 Chain of Custody

1. Relinquished By:	Date: 7-7-23	Time: 1445	1. Received By:	Date: 7/7/23	Time: 1445
2. Relinquished By:	Date:	Time:	2. Received By: ML	Date: 7/7/23	Time: 1632

Comments: 4.9 14.4

596

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22768-1

Login Number: 22768
List Number: 1
Creator: Clerisier, Meline

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22768-1

Login Number: 22768
List Number: 2
Creator: Pena, Jesiel

List Source: Eurofins Houston
List Creation: 07/11/23 03:05 PM

Question	Answer	Comment
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Alex Murphy
Tetra Tech, Inc.
1353 N Courtenay Pkwy, Suite S
Merritt Island, Florida 32953

Generated 7/18/2023 5:24:11 PM

JOB DESCRIPTION

NASA KSC SW3

JOB NUMBER

670-22770-1

Eurofins Orlando
481 Newburyport Avenue
Altamonte Springs FL 32701

See page two for job notes and contact information.

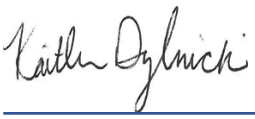
my EOL

Job Notes

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The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Definitions/Glossary

Client: Tetra Tech, Inc.
Job ID: 670-22770-1
Project/Site: NASA KSC SW3

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 670-22770-1

Laboratory: Eurofins Orlando

Narrative

Job Narrative
670-22770-1

Receipt

The samples were received on 7/7/2023 5:09 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.4°C

GC/MS VOA

Method 8260D: The initial calibration verification (ICV) analyzed in batch 680-787574 was outside method criteria for the following analyte(s): 2-Butanone (MEK), 2-Hexanone, 4-Methyl-2-pentanone, Acetone and Dichlorodifluoromethane. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 680-787825 was outside the method criteria for the following analyte(s): 2-Hexanone, 4-Methyl-2-pentanone, Chloroethane, Chloromethane, Dibromochloromethane, Tetrachloroethene and Trichloroethene. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-787825 recovered outside control limits for the following analyte(s): 2-Hexanone and 4-Methyl-2-pentanone. 2-Hexanone and 4-Methyl-2-pentanone have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-788091 recovered outside acceptance criteria, low biased, for 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-Chloropropane, 2-Butanone (MEK), 2-Hexanone, 4-Methyl-2-pentanone and Acetone. A reporting limit (RL) standard was analyzed, and the target analytes are detected. Since the associated samples were non-detect for the analyte(s), the data are reported.

Method 8260D: The continuing calibration verification (CCV) associated with batch 680-788091 recovered above the upper control limit for Chloroethane, Dichlorodifluoromethane and Trichlorofluoromethane. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8260D: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for analytical batch 680-788091 recovered outside control limits for the following analyte(s): 2-Butanone (MEK) and 2-Hexanone. 2-Butanone (MEK) and 2-Hexanone have been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed. These results have been reported and qualified.

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 680-788091 recovered outside control limits for the following analytes: Carbon disulfide and Trichlorofluoromethane. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with analytical batch 680-788091.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0032-047.5-20230706 — Lab Sample ID: 670-22770-1

No Detections.

Client Sample ID: SW3-MW0031-047.5-20230706 — Lab Sample ID: 670-22770-2

No Detections.

Client Sample ID: SW3-MW0030-040.0-20230706 — Lab Sample ID: 670-22770-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloroform	0.34	I	1.0	0.27	ug/L	1		8260D	Total/NA

Client Sample ID: SW3-MW0029-020.0-20230706 — Lab Sample ID: 670-22770-4

No Detections.

Client Sample ID: SW3-MW0035-047.5-20230706 — Lab Sample ID: 670-22770-5

No Detections.

Client Sample ID: SW3-MW0034-040.0-20230706 — Lab Sample ID: 670-22770-6

No Detections.

Client Sample ID: SW3-MW0033-030.0-20230706 — Lab Sample ID: 670-22770-7

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0032-047.5-20230706
Date Collected: 07/06/23 08:25
Date Received: 07/07/23 17:09

Lab Sample ID: 670-22770-1
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/13/23 14:07	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/13/23 14:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/13/23 14:07	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/13/23 14:07	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/13/23 14:07	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/13/23 14:07	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/13/23 14:07	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/13/23 14:07	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/13/23 14:07	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 14:07	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/13/23 14:07	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/13/23 14:07	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 14:07	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 14:07	1
2-Butanone (MEK)	6.4	U J3	10	6.4	ug/L			07/13/23 14:07	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/13/23 14:07	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/13/23 14:07	1
Acetone	3.7	U	10	3.7	ug/L			07/13/23 14:07	1
Benzene	0.27	U	1.0	0.27	ug/L			07/13/23 14:07	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/13/23 14:07	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/13/23 14:07	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/13/23 14:07	1
Carbon disulfide	0.43	U J3	2.0	0.43	ug/L			07/13/23 14:07	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/13/23 14:07	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/13/23 14:07	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/13/23 14:07	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/13/23 14:07	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/13/23 14:07	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/13/23 14:07	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/13/23 14:07	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/13/23 14:07	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/13/23 14:07	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/13/23 14:07	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/13/23 14:07	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/13/23 14:07	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/13/23 14:07	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/13/23 14:07	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/13/23 14:07	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/13/23 14:07	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/13/23 14:07	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/13/23 14:07	1
Styrene	0.27	U	1.0	0.27	ug/L			07/13/23 14:07	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/13/23 14:07	1
Toluene	0.25	U	1.0	0.25	ug/L			07/13/23 14:07	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/13/23 14:07	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/13/23 14:07	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/13/23 14:07	1
Trichlorofluoromethane	0.33	U J3	1.0	0.33	ug/L			07/13/23 14:07	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/13/23 14:07	1

Client Sample ID: SW3-MW0032-047.5-20230706

Lab Sample ID: 670-22770-1

Date Collected: 07/06/23 08:25

Matrix: Water

Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/13/23 14:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*122*		*70 - 130*		*07/13/23 14:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*60 - 124*		*07/13/23 14:07*	*1*
4-Bromofluorobenzene (Surr)	*98*		*70 - 130*		*07/13/23 14:07*	*1*
Toluene-d8 (Surr)	*114*		*70 - 130*		*07/13/23 14:07*	*1*

Client Sample ID: SW3-MW0031-047.5-20230706

Lab Sample ID: 670-22770-2

Date Collected: 07/06/23 08:43

Matrix: Water

Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 15:21	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 15:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 15:21	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 15:21	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 15:21	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 15:21	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 15:21	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 15:21	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 15:21	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:21	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 15:21	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 15:21	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:21	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:21	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 15:21	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 15:21	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 15:21	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 15:21	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 15:21	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 15:21	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 15:21	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 15:21	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 15:21	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 15:21	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 15:21	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 15:21	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 15:21	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 15:21	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 15:21	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 15:21	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 15:21	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 15:21	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 15:21	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 15:21	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 15:21	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 15:21	1

Client Sample ID: SW3-MW0031-047.5-20230706 — **Lab Sample ID: 670-22770-2**
Date Collected: 07/06/23 08:43 — **Matrix: Water**
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 15:21	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 15:21	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 15:21	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 15:21	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 15:21	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 15:21	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 15:21	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 15:21	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 15:21	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 15:21	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 15:21	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 15:21	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 15:21	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 15:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*125*		*70 - 130*		*07/12/23 15:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*60 - 124*		*07/12/23 15:21*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 15:21*	*1*
Toluene-d8 (Surr)	*123*		*70 - 130*		*07/12/23 15:21*	*1*

Client Sample ID: SW3-MW0030-040.0-20230706 — **Lab Sample ID: 670-22770-3**
Date Collected: 07/06/23 09:19 — **Matrix: Water**
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 15:41	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 15:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 15:41	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 15:41	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 15:41	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 15:41	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 15:41	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 15:41	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 15:41	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:41	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 15:41	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 15:41	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:41	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 15:41	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 15:41	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 15:41	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 15:41	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 15:41	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 15:41	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 15:41	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 15:41	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 15:41	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 15:41	1

Client Sample ID: SW3-MW0030-040.0-20230706 — **Lab Sample ID: 670-22770-3**
Date Collected: 07/06/23 09:19 — **Matrix: Water**
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 15:41	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 15:41	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 15:41	1
Chloroform	**0.34**	**I**	1.0	0.27	ug/L			07/12/23 15:41	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 15:41	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 15:41	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 15:41	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 15:41	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 15:41	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 15:41	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 15:41	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 15:41	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 15:41	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 15:41	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 15:41	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 15:41	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 15:41	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 15:41	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 15:41	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 15:41	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 15:41	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 15:41	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 15:41	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 15:41	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 15:41	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 15:41	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 15:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*125*		*70 - 130*		*07/12/23 15:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*60 - 124*		*07/12/23 15:41*	*1*
4-Bromofluorobenzene (Surr)	*103*		*70 - 130*		*07/12/23 15:41*	*1*
Toluene-d8 (Surr)	*123*		*70 - 130*		*07/12/23 15:41*	*1*

Client Sample ID: SW3-MW0029-020.0-20230706 — **Lab Sample ID: 670-22770-4**
Date Collected: 07/06/23 09:53 — **Matrix: Water**
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 16:02	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 16:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 16:02	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 16:02	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:02	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 16:02	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 16:02	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 16:02	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 16:02	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:02	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0029-020.0-20230706
Date Collected: 07/06/23 09:53
Date Received: 07/07/23 17:09

Lab Sample ID: 670-22770-4
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:02	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 16:02	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:02	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:02	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 16:02	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 16:02	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 16:02	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 16:02	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 16:02	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:02	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 16:02	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 16:02	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 16:02	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 16:02	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 16:02	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 16:02	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 16:02	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 16:02	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 16:02	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 16:02	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 16:02	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 16:02	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 16:02	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 16:02	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 16:02	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 16:02	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 16:02	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 16:02	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 16:02	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 16:02	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 16:02	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 16:02	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 16:02	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 16:02	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 16:02	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 16:02	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 16:02	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:02	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 16:02	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 16:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*127*		*70 - 130*		*07/12/23 16:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*60 - 124*		*07/12/23 16:02*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*07/12/23 16:02*	*1*
Toluene-d8 (Surr)	*122*		*70 - 130*		*07/12/23 16:02*	*1*

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0035-047.5-20230706
Date Collected: 07/06/23 11:30
Date Received: 07/07/23 17:09

Lab Sample ID: 670-22770-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 16:22	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 16:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 16:22	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 16:22	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:22	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 16:22	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 16:22	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 16:22	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 16:22	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:22	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:22	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 16:22	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:22	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:22	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 16:22	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 16:22	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 16:22	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 16:22	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 16:22	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:22	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 16:22	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 16:22	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 16:22	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 16:22	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 16:22	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 16:22	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 16:22	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 16:22	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 16:22	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 16:22	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 16:22	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 16:22	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 16:22	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 16:22	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 16:22	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 16:22	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 16:22	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 16:22	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 16:22	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 16:22	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 16:22	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 16:22	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 16:22	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 16:22	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 16:22	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 16:22	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 16:22	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:22	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 16:22	1

Client Sample ID: SW3-MW0035-047.5-20230706

Lab Sample ID: 670-22770-5

Date Collected: 07/06/23 11:30

Matrix: Water

Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 16:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*126*		*70 - 130*		*07/12/23 16:22*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*60 - 124*		*07/12/23 16:22*	*1*
4-Bromofluorobenzene (Surr)	*106*		*70 - 130*		*07/12/23 16:22*	*1*
Toluene-d8 (Surr)	*124*		*70 - 130*		*07/12/23 16:22*	*1*

Client Sample ID: SW3-MW0034-040.0-20230706

Lab Sample ID: 670-22770-6

Date Collected: 07/06/23 11:55

Matrix: Water

Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 16:43	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 16:43	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 16:43	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 16:43	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:43	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 16:43	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 16:43	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 16:43	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 16:43	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:43	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:43	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 16:43	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:43	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 16:43	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 16:43	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 16:43	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 16:43	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 16:43	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 16:43	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 16:43	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 16:43	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 16:43	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 16:43	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 16:43	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 16:43	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 16:43	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 16:43	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 16:43	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 16:43	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 16:43	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 16:43	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 16:43	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 16:43	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 16:43	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 16:43	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 16:43	1

Client Sample ID: SW3-MW0034-040.0-20230706
Lab Sample ID: 670-22770-6

Date Collected: 07/06/23 11:55
Matrix: Water
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 16:43	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 16:43	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 16:43	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 16:43	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 16:43	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 16:43	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 16:43	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 16:43	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 16:43	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 16:43	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 16:43	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 16:43	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 16:43	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 16:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*126*		*70 - 130*		*07/12/23 16:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*117*		*60 - 124*		*07/12/23 16:43*	*1*
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*		*07/12/23 16:43*	*1*
Toluene-d8 (Surr)	*125*		*70 - 130*		*07/12/23 16:43*	*1*

Client Sample ID: SW3-MW0033-030.0-20230706
Lab Sample ID: 670-22770-7

Date Collected: 07/06/23 12:21
Matrix: Water
Date Received: 07/07/23 17:09

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 17:04	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 17:04	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 17:04	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 17:04	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 17:04	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 17:04	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 17:04	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 17:04	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 17:04	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 17:04	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 17:04	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 17:04	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 17:04	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 17:04	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 17:04	1
2-Hexanone	3.2	U J3	10	3.2	ug/L			07/12/23 17:04	1
4-Methyl-2-pentanone	2.7	U J3	10	2.7	ug/L			07/12/23 17:04	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 17:04	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 17:04	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 17:04	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 17:04	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 17:04	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 17:04	1

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0033-030.0-20230706
Date Collected: 07/06/23 12:21
Date Received: 07/07/23 17:09

Lab Sample ID: 670-22770-7
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 17:04	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 17:04	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 17:04	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 17:04	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 17:04	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 17:04	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 17:04	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 17:04	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 17:04	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 17:04	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 17:04	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 17:04	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 17:04	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 17:04	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 17:04	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 17:04	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 17:04	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 17:04	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 17:04	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 17:04	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 17:04	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 17:04	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 17:04	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 17:04	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 17:04	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 17:04	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 17:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*124*		*70 - 130*		*07/12/23 17:04*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*60 - 124*		*07/12/23 17:04*	*1*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*		*07/12/23 17:04*	*1*
Toluene-d8 (Surr)	*119*		*70 - 130*		*07/12/23 17:04*	*1*

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DBFM	DCA	BFB	TOL
Lab Sample ID	Client Sample ID	(70-130)	(60-124)	(70-130)	(70-130)
670-22770-1	SW3-MW0032-047.5-20230706	122	96	98	114
670-22770-2	SW3-MW0031-047.5-20230706	125	116	103	123
670-22770-3	SW3-MW0030-040.0-20230706	125	119	103	123
670-22770-4	SW3-MW0029-020.0-20230706	127	117	106	122
670-22770-5	SW3-MW0035-047.5-20230706	126	118	106	124
670-22770-6	SW3-MW0034-040.0-20230706	126	117	110	125
670-22770-7	SW3-MW0033-030.0-20230706	124	115	92	119
LCS 680-787825/5	Lab Control Sample	107	104	105	114
LCS 680-788091/4	Lab Control Sample	102	98	92	97
LCSD 680-787825/6	Lab Control Sample Dup	103	102	102	113
LCSD 680-788091/5	Lab Control Sample Dup	100	98	96	100
MB 680-787825/9	Method Blank	126	115	107	123
MB 680-788091/7	Method Blank	116	100	110	108

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 680-787825/9
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/12/23 13:41	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/12/23 13:41	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/12/23 13:41	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/12/23 13:41	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/12/23 13:41	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/12/23 13:41	1
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/12/23 13:41	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/12/23 13:41	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/12/23 13:41	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:41	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/12/23 13:41	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/12/23 13:41	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:41	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/12/23 13:41	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/12/23 13:41	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/12/23 13:41	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/12/23 13:41	1
Acetone	3.7	U	10	3.7	ug/L			07/12/23 13:41	1
Benzene	0.27	U	1.0	0.27	ug/L			07/12/23 13:41	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/12/23 13:41	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/12/23 13:41	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/12/23 13:41	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/12/23 13:41	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/12/23 13:41	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/12/23 13:41	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/12/23 13:41	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/12/23 13:41	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/12/23 13:41	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/12/23 13:41	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/12/23 13:41	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/12/23 13:41	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/12/23 13:41	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/12/23 13:41	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/12/23 13:41	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/12/23 13:41	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/12/23 13:41	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/12/23 13:41	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/12/23 13:41	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/12/23 13:41	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/12/23 13:41	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/12/23 13:41	1
Styrene	0.27	U	1.0	0.27	ug/L			07/12/23 13:41	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/12/23 13:41	1
Toluene	0.25	U	1.0	0.25	ug/L			07/12/23 13:41	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/12/23 13:41	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/12/23 13:41	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/12/23 13:41	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/12/23 13:41	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-787825/9
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/12/23 13:41	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/12/23 13:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*126*		*70 - 130*		*07/12/23 13:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*60 - 124*		*07/12/23 13:41*	*1*
4-Bromofluorobenzene (Surr)	*107*		*70 - 130*		*07/12/23 13:41*	*1*
Toluene-d8 (Surr)	*123*		*70 - 130*		*07/12/23 13:41*	*1*

Lab Sample ID: LCS 680-787825/5
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	54.8		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	50.0	59.0		ug/L		118	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.9		ug/L		96	63 - 141
1,1,2-Trichloroethane	50.0	58.7		ug/L		117	70 - 130
1,1-Dichloroethane	50.0	46.3		ug/L		93	70 - 130
1,1-Dichloroethene	50.0	51.3		ug/L		103	70 - 130
1,2,4-Trichlorobenzene	50.0	51.0		ug/L		102	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	51.2		ug/L		102	70 - 130
1,2-Dibromoethane (EDB)	50.0	56.8		ug/L		114	70 - 130
1,2-Dichlorobenzene	50.0	51.3		ug/L		103	70 - 130
1,2-Dichloroethane	50.0	51.0		ug/L		102	70 - 130
1,2-Dichloropropane	50.0	52.1		ug/L		104	70 - 130
1,3-Dichlorobenzene	50.0	52.0		ug/L		104	70 - 130
1,4-Dichlorobenzene	50.0	50.9		ug/L		102	70 - 130
2-Butanone (MEK)	250	270		ug/L		108	69 - 120
2-Hexanone	250	349	J3	ug/L		140	70 - 130
4-Methyl-2-pentanone	250	323	J3	ug/L		129	68 - 120
Acetone	250	264		ug/L		105	67 - 120
Benzene	50.0	52.1		ug/L		104	70 - 130
Bromodichloromethane	50.0	54.1		ug/L		108	70 - 130
Bromoform	50.0	49.9		ug/L		100	69 - 129
Bromomethane	50.0	46.8		ug/L		94	28 - 192
Carbon disulfide	50.0	45.3		ug/L		91	70 - 130
Carbon tetrachloride	50.0	56.7		ug/L		113	70 - 130
Chlorobenzene	50.0	53.7		ug/L		107	70 - 130
Chloroethane	50.0	63.7		ug/L		127	31 - 213
Chloroform	50.0	51.2		ug/L		102	70 - 130
Chloromethane	50.0	37.1		ug/L		74	59 - 127
cis-1,2-Dichloroethene	50.0	54.5		ug/L		109	70 - 130
cis-1,3-Dichloropropene	50.0	50.1		ug/L		100	70 - 130
Cyclohexane	50.0	44.5		ug/L		89	23 - 175
Dibromochloromethane	50.0	63.0		ug/L		126	70 - 130
Dichlorodifluoromethane	50.0	56.1		ug/L		112	70 - 130
Ethylbenzene	50.0	53.3		ug/L		107	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-787825/5
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Isopropylbenzene			50.0	54.6		ug/L		109	70 - 130		
m,p-Xylenes			50.0	53.2		ug/L		106	70 - 130		
Methyl acetate			100	105		ug/L		105	67 - 120		
Methyl tert-butyl ether			50.0	54.7		ug/L		109	70 - 130		
Methylcyclohexane			50.0	51.4		ug/L		103	70 - 130		
Methylene Chloride			50.0	47.8		ug/L		96	70 - 130		
o-Xylene			50.0	53.0		ug/L		106	70 - 130		
Styrene			50.0	57.1		ug/L		114	70 - 130		
Tetrachloroethene			50.0	60.6		ug/L		121	70 - 130		
Toluene			50.0	55.9		ug/L		112	70 - 130		
trans-1,2-Dichloroethene			50.0	49.7		ug/L		99	70 - 130		
trans-1,3-Dichloropropene			50.0	56.1		ug/L		112	70 - 130		
Trichloroethene			50.0	59.3		ug/L		119	70 - 130		
Trichlorofluoromethane			50.0	46.7		ug/L		93	63 - 142		
Vinyl chloride			50.0	47.9		ug/L		96	66 - 129		
Xylenes, Total			100	106		ug/L		106	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*107*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*104*		*60 - 124*
4-Bromofluorobenzene (Surr)	*105*		*70 - 130*
Toluene-d8 (Surr)	*114*		*70 - 130*

Lab Sample ID: LCSD 680-787825/6
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			50.0	54.5		ug/L		109	70 - 130	1	30
1,1,2,2-Tetrachloroethane			50.0	56.4		ug/L		113	70 - 130	5	30
1,1,2-Trichloro-1,2,2-trifluoroetha ne			50.0	46.4		ug/L		93	63 - 141	3	30
1,1,2-Trichloroethane			50.0	57.0		ug/L		114	70 - 130	3	30
1,1-Dichloroethane			50.0	46.1		ug/L		92	70 - 130	0	30
1,1-Dichloroethene			50.0	49.8		ug/L		100	70 - 130	3	20
1,2,4-Trichlorobenzene			50.0	50.2		ug/L		100	70 - 130	2	30
1,2-Dibromo-3-Chloropropane			50.0	50.9		ug/L		102	70 - 130	1	30
1,2-Dibromoethane (EDB)			50.0	56.6		ug/L		113	70 - 130	0	30
1,2-Dichlorobenzene			50.0	50.1		ug/L		100	70 - 130	2	30
1,2-Dichloroethane			50.0	51.5		ug/L		103	70 - 130	1	50
1,2-Dichloropropane			50.0	51.1		ug/L		102	70 - 130	2	20
1,3-Dichlorobenzene			50.0	50.2		ug/L		100	70 - 130	3	30
1,4-Dichlorobenzene			50.0	49.3		ug/L		99	70 - 130	3	30
2-Butanone (MEK)			250	270		ug/L		108	69 - 120	0	30
2-Hexanone			250	357	J3	ug/L		143	70 - 130	2	20
4-Methyl-2-pentanone			250	327	J3	ug/L		131	68 - 120	1	30
Acetone			250	262		ug/L		105	67 - 120	1	30
Benzene			50.0	51.3		ug/L		103	70 - 130	2	30
Bromodichloromethane			50.0	53.1		ug/L		106	70 - 130	2	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-787825/6
Matrix: Water
Analysis Batch: 787825

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromoform	50.0	49.8		ug/L		100	69 - 129	0	30
Bromomethane	50.0	49.0		ug/L		98	28 - 192	5	30
Carbon disulfide	50.0	44.3		ug/L		89	70 - 130	2	30
Carbon tetrachloride	50.0	55.5		ug/L		111	70 - 130	2	30
Chlorobenzene	50.0	53.2		ug/L		106	70 - 130	1	30
Chloroethane	50.0	57.4		ug/L		115	31 - 213	10	30
Chloroform	50.0	50.5		ug/L		101	70 - 130	1	30
Chloromethane	50.0	36.7		ug/L		73	59 - 127	1	30
cis-1,2-Dichloroethene	50.0	53.8		ug/L		108	70 - 130	1	30
cis-1,3-Dichloropropene	50.0	49.8		ug/L		100	70 - 130	1	20
Cyclohexane	50.0	42.9		ug/L		86	23 - 175	4	30
Dibromochloromethane	50.0	61.4		ug/L		123	70 - 130	3	30
Dichlorodifluoromethane	50.0	54.3		ug/L		109	70 - 130	3	40
Ethylbenzene	50.0	52.4		ug/L		105	70 - 130	2	20
Isopropylbenzene	50.0	54.6		ug/L		109	70 - 130	0	30
m,p-Xylenes	50.0	52.5		ug/L		105	70 - 130	1	30
Methyl acetate	100	104		ug/L		104	67 - 120	0	30
Methyl tert-butyl ether	50.0	54.3		ug/L		109	70 - 130	1	30
Methylcyclohexane	50.0	50.7		ug/L		101	70 - 130	1	30
Methylene Chloride	50.0	46.3		ug/L		93	70 - 130	3	30
o-Xylene	50.0	51.9		ug/L		104	70 - 130	2	30
Styrene	50.0	56.6		ug/L		113	70 - 130	1	30
Tetrachloroethene	50.0	59.1		ug/L		118	70 - 130	3	30
Toluene	50.0	55.1		ug/L		110	70 - 130	2	30
trans-1,2-Dichloroethene	50.0	49.5		ug/L		99	70 - 130	1	30
trans-1,3-Dichloropropene	50.0	54.7		ug/L		109	70 - 130	2	30
Trichloroethene	50.0	60.4		ug/L		121	70 - 130	2	30
Trichlorofluoromethane	50.0	44.5		ug/L		89	63 - 142	5	30
Vinyl chloride	50.0	46.5		ug/L		93	66 - 129	3	30
Xylenes, Total	100	104		ug/L		104	70 - 130	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*60 - 124*
4-Bromofluorobenzene (Surr)	*102*		*70 - 130*
Toluene-d8 (Surr)	*113*		*70 - 130*

Lab Sample ID: MB 680-788091/7
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	0.21	U	1.0	0.21	ug/L			07/13/23 12:10	1
1,1,2,2-Tetrachloroethane	0.40	U	1.0	0.40	ug/L			07/13/23 12:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1
1,1,2-Trichloroethane	0.32	U	1.0	0.32	ug/L			07/13/23 12:10	1
1,1-Dichloroethane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
1,1-Dichloroethene	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788091/7
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trichlorobenzene	0.53	U	5.0	0.53	ug/L			07/13/23 12:10	1
1,2-Dibromo-3-Chloropropane	1.8	U	5.0	1.8	ug/L			07/13/23 12:10	1
1,2-Dibromoethane (EDB)	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
1,2-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
1,2-Dichloroethane	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
1,2-Dichloropropane	0.22	U	1.0	0.22	ug/L			07/13/23 12:10	1
1,3-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
1,4-Dichlorobenzene	0.31	U	1.0	0.31	ug/L			07/13/23 12:10	1
2-Butanone (MEK)	6.4	U	10	6.4	ug/L			07/13/23 12:10	1
2-Hexanone	3.2	U	10	3.2	ug/L			07/13/23 12:10	1
4-Methyl-2-pentanone	2.7	U	10	2.7	ug/L			07/13/23 12:10	1
Acetone	3.7	U	10	3.7	ug/L			07/13/23 12:10	1
Benzene	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Bromodichloromethane	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
Bromoform	0.59	U	1.0	0.59	ug/L			07/13/23 12:10	1
Bromomethane	3.7	U	5.0	3.7	ug/L			07/13/23 12:10	1
Carbon disulfide	0.43	U	2.0	0.43	ug/L			07/13/23 12:10	1
Carbon tetrachloride	0.30	U	1.0	0.30	ug/L			07/13/23 12:10	1
Chlorobenzene	0.15	U	1.0	0.15	ug/L			07/13/23 12:10	1
Chloroethane	4.6	U	5.0	4.6	ug/L			07/13/23 12:10	1
Chloroform	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Chloromethane	0.54	U	1.0	0.54	ug/L			07/13/23 12:10	1
cis-1,2-Dichloroethene	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
cis-1,3-Dichloropropene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
Cyclohexane	0.28	U	1.0	0.28	ug/L			07/13/23 12:10	1
Dibromochloromethane	0.39	U	1.0	0.39	ug/L			07/13/23 12:10	1
Dichlorodifluoromethane	0.36	U	1.0	0.36	ug/L			07/13/23 12:10	1
Ethylbenzene	0.20	U	1.0	0.20	ug/L			07/13/23 12:10	1
Isopropylbenzene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
m,p-Xylenes	0.49	U	1.0	0.49	ug/L			07/13/23 12:10	1
Methyl acetate	3.2	U	5.0	3.2	ug/L			07/13/23 12:10	1
Methyl tert-butyl ether	0.81	U	5.0	0.81	ug/L			07/13/23 12:10	1
Methylcyclohexane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
Methylene Chloride	3.2	U	5.0	3.2	ug/L			07/13/23 12:10	1
o-Xylene	0.26	U	1.0	0.26	ug/L			07/13/23 12:10	1
Styrene	0.27	U	1.0	0.27	ug/L			07/13/23 12:10	1
Tetrachloroethene	0.35	U	0.50	0.35	ug/L			07/13/23 12:10	1
Toluene	0.25	U	1.0	0.25	ug/L			07/13/23 12:10	1
trans-1,2-Dichloroethene	0.34	U	1.0	0.34	ug/L			07/13/23 12:10	1
trans-1,3-Dichloropropene	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1
Trichloroethene	0.20	U	1.0	0.20	ug/L			07/13/23 12:10	1
Trichlorofluoromethane	0.33	U	1.0	0.33	ug/L			07/13/23 12:10	1
Vinyl chloride	0.40	U	1.0	0.40	ug/L			07/13/23 12:10	1
Xylenes, Total	0.23	U	1.0	0.23	ug/L			07/13/23 12:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*70 - 130*		*07/13/23 12:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*60 - 124*		*07/13/23 12:10*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 680-788091/7
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	*110*		*70 - 130*		*07/13/23 12:10*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*		*07/13/23 12:10*	*1*

Lab Sample ID: LCS 680-788091/4
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1-Trichloroethane	50.0	53.1		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	50.0	42.1		ug/L		84	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	52.7		ug/L		105	63 - 141
1,1,2-Trichloroethane	50.0	44.8		ug/L		90	70 - 130
1,1-Dichloroethane	50.0	54.9		ug/L		110	70 - 130
1,1-Dichloroethene	50.0	62.9		ug/L		126	70 - 130
1,2,4-Trichlorobenzene	50.0	55.5		ug/L		111	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	38.3		ug/L		77	70 - 130
1,2-Dibromoethane (EDB)	50.0	47.7		ug/L		95	70 - 130
1,2-Dichlorobenzene	50.0	50.1		ug/L		100	70 - 130
1,2-Dichloroethane	50.0	53.4		ug/L		107	70 - 130
1,2-Dichloropropane	50.0	49.5		ug/L		99	70 - 130
1,3-Dichlorobenzene	50.0	51.7		ug/L		103	70 - 130
1,4-Dichlorobenzene	50.0	50.8		ug/L		102	70 - 130
2-Butanone (MEK)	250	158	J3	ug/L		63	69 - 120
2-Hexanone	250	157	J3	ug/L		63	70 - 130
4-Methyl-2-pentanone	250	171		ug/L		68	68 - 120
Acetone	250	191		ug/L		76	67 - 120
Benzene	50.0	52.0		ug/L		104	70 - 130
Bromodichloromethane	50.0	49.6		ug/L		99	70 - 130
Bromoform	50.0	44.3		ug/L		89	69 - 129
Bromomethane	50.0	61.7		ug/L		123	28 - 192
Carbon disulfide	50.0	58.3		ug/L		117	70 - 130
Carbon tetrachloride	50.0	49.8		ug/L		100	70 - 130
Chlorobenzene	50.0	50.5		ug/L		101	70 - 130
Chloroethane	50.0	67.6		ug/L		135	31 - 213
Chloroform	50.0	54.0		ug/L		108	70 - 130
Chloromethane	50.0	55.7		ug/L		111	59 - 127
cis-1,2-Dichloroethene	50.0	55.5		ug/L		111	70 - 130
cis-1,3-Dichloropropene	50.0	47.5		ug/L		95	70 - 130
Cyclohexane	50.0	46.8		ug/L		94	23 - 175
Dibromochloromethane	50.0	47.6		ug/L		95	70 - 130
Dichlorodifluoromethane	50.0	53.3		ug/L		107	70 - 130
Ethylbenzene	50.0	49.7		ug/L		99	70 - 130
Isopropylbenzene	50.0	51.7		ug/L		103	70 - 130
m,p-Xylenes	50.0	49.5		ug/L		99	70 - 130
Methyl acetate	100	80.9		ug/L		81	67 - 120
Methyl tert-butyl ether	50.0	52.7		ug/L		105	70 - 130
Methylcyclohexane	50.0	44.4		ug/L		89	70 - 130
Methylene Chloride	50.0	54.3		ug/L		109	70 - 130

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 680-788091/4
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
o-Xylene			50.0	49.2		ug/L		98	70 - 130		
Styrene			50.0	50.4		ug/L		101	70 - 130		
Tetrachloroethene			50.0	49.3		ug/L		99	70 - 130		
Toluene			50.0	47.7		ug/L		95	70 - 130		
trans-1,2-Dichloroethene			50.0	59.3		ug/L		119	70 - 130		
trans-1,3-Dichloropropene			50.0	51.1		ug/L		102	70 - 130		
Trichloroethene			50.0	51.1		ug/L		102	70 - 130		
Trichlorofluoromethane			50.0	67.3		ug/L		135	63 - 142		
Vinyl chloride			50.0	52.1		ug/L		104	66 - 129		
Xylenes, Total			100	98.7		ug/L		99	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 124*
4-Bromofluorobenzene (Surr)	*92*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-788091/5
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1-Trichloroethane			50.0	53.4		ug/L		107	70 - 130	1	30
1,1,2,2-Tetrachloroethane			50.0	40.6		ug/L		81	70 - 130	4	30
1,1,2-Trichloro-1,2,2-trifluoroethane			50.0	55.0		ug/L		110	63 - 141	4	30
1,1,2-Trichloroethane			50.0	46.4		ug/L		93	70 - 130	3	30
1,1-Dichloroethane			50.0	55.1		ug/L		110	70 - 130	0	30
1,1-Dichloroethene			50.0	54.0		ug/L		108	70 - 130	15	20
1,2,4-Trichlorobenzene			50.0	57.5		ug/L		115	70 - 130	4	30
1,2-Dibromo-3-Chloropropane			50.0	38.8		ug/L		78	70 - 130	1	30
1,2-Dibromoethane (EDB)			50.0	48.3		ug/L		97	70 - 130	1	30
1,2-Dichlorobenzene			50.0	52.0		ug/L		104	70 - 130	4	30
1,2-Dichloroethane			50.0	53.8		ug/L		108	70 - 130	1	50
1,2-Dichloropropane			50.0	49.8		ug/L		100	70 - 130	1	20
1,3-Dichlorobenzene			50.0	52.8		ug/L		106	70 - 130	2	30
1,4-Dichlorobenzene			50.0	53.1		ug/L		106	70 - 130	4	30
2-Butanone (MEK)			250	161	J3	ug/L		64	69 - 120	1	30
2-Hexanone			250	163	J3	ug/L		65	70 - 130	4	20
4-Methyl-2-pentanone			250	179		ug/L		72	68 - 120	5	30
Acetone			250	193		ug/L		77	67 - 120	1	30
Benzene			50.0	52.5		ug/L		105	70 - 130	1	30
Bromodichloromethane			50.0	50.8		ug/L		102	70 - 130	2	30
Bromoform			50.0	44.2		ug/L		88	69 - 129	0	30
Bromomethane			50.0	63.0		ug/L		126	28 - 192	2	30
Carbon disulfide			50.0	67.9	J3	ug/L		136	70 - 130	15	30
Carbon tetrachloride			50.0	50.0		ug/L		100	70 - 130	0	30
Chlorobenzene			50.0	49.1		ug/L		98	70 - 130	3	30
Chloroethane			50.0	68.4		ug/L		137	31 - 213	1	30

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 680-788091/5
Matrix: Water
Analysis Batch: 788091

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloroform			50.0	53.5		ug/L		107	70 - 130	1	30
Chloromethane			50.0	54.9		ug/L		110	59 - 127	1	30
cis-1,2-Dichloroethene			50.0	54.9		ug/L		110	70 - 130	1	30
cis-1,3-Dichloropropene			50.0	48.7		ug/L		97	70 - 130	2	20
Cyclohexane			50.0	52.3		ug/L		105	23 - 175	11	30
Dibromochloromethane			50.0	48.3		ug/L		97	70 - 130	1	30
Dichlorodifluoromethane			50.0	62.5		ug/L		125	70 - 130	16	40
Ethylbenzene			50.0	49.2		ug/L		98	70 - 130	1	20
Isopropylbenzene			50.0	51.4		ug/L		103	70 - 130	1	30
m,p-Xylenes			50.0	49.2		ug/L		98	70 - 130	1	30
Methyl acetate			100	82.6		ug/L		83	67 - 120	2	30
Methyl tert-butyl ether			50.0	53.5		ug/L		107	70 - 130	2	30
Methylcyclohexane			50.0	51.7		ug/L		103	70 - 130	15	30
Methylene Chloride			50.0	54.1		ug/L		108	70 - 130	0	30
o-Xylene			50.0	48.5		ug/L		97	70 - 130	1	30
Styrene			50.0	51.0		ug/L		102	70 - 130	1	30
Tetrachloroethene			50.0	51.2		ug/L		102	70 - 130	4	30
Toluene			50.0	48.6		ug/L		97	70 - 130	2	30
trans-1,2-Dichloroethene			50.0	58.3		ug/L		117	70 - 130	2	30
trans-1,3-Dichloropropene			50.0	52.2		ug/L		104	70 - 130	2	30
Trichloroethene			50.0	53.4		ug/L		107	70 - 130	4	30
Trichlorofluoromethane			50.0	72.9	J3	ug/L		146	63 - 142	8	30
Vinyl chloride			50.0	52.7		ug/L		105	66 - 129	1	30
Xylenes, Total			100	97.7		ug/L		98	70 - 130	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*70 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*60 - 124*
4-Bromofluorobenzene (Surr)	*96*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Client: Tetra Tech, Inc.
Job ID: 670-22770-1
Project/Site: NASA KSC SW3

GC/MS VOA

Analysis Batch: 787825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22770-2	SW3-MW0031-047.5-20230706	Total/NA	Water	8260D	
670-22770-3	SW3-MW0030-040.0-20230706	Total/NA	Water	8260D	
670-22770-4	SW3-MW0029-020.0-20230706	Total/NA	Water	8260D	
670-22770-5	SW3-MW0035-047.5-20230706	Total/NA	Water	8260D	
670-22770-6	SW3-MW0034-040.0-20230706	Total/NA	Water	8260D	
670-22770-7	SW3-MW0033-030.0-20230706	Total/NA	Water	8260D	
MB 680-787825/9	Method Blank	Total/NA	Water	8260D	
LCS 680-787825/5	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-787825/6	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 788091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-22770-1	SW3-MW0032-047.5-20230706	Total/NA	Water	8260D	
MB 680-788091/7	Method Blank	Total/NA	Water	8260D	
LCS 680-788091/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 680-788091/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Client Sample ID: SW3-MW0032-047.5-20230706
Lab Sample ID: 670-22770-1
Date Collected: 07/06/23 08:25
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	788091	P1C	EET SAV	07/13/23 14:07

Client Sample ID: SW3-MW0031-047.5-20230706
Lab Sample ID: 670-22770-2
Date Collected: 07/06/23 08:43
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 15:21

Client Sample ID: SW3-MW0030-040.0-20230706
Lab Sample ID: 670-22770-3
Date Collected: 07/06/23 09:19
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 15:41

Client Sample ID: SW3-MW0029-020.0-20230706
Lab Sample ID: 670-22770-4
Date Collected: 07/06/23 09:53
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 16:02

Client Sample ID: SW3-MW0035-047.5-20230706
Lab Sample ID: 670-22770-5
Date Collected: 07/06/23 11:30
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 16:22

Client Sample ID: SW3-MW0034-040.0-20230706
Lab Sample ID: 670-22770-6
Date Collected: 07/06/23 11:55
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 16:43

Client Sample ID: SW3-MW0033-030.0-20230706
Lab Sample ID: 670-22770-7
Date Collected: 07/06/23 12:21
Matrix: Water
Date Received: 07/07/23 17:09

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	787825	P1C	EET SAV	07/12/23 17:04

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 670-22770-1
Project/Site: NASA KSC SW3

Laboratory: Eurofins Savannah

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
	AFCEE	SAVLAB	
Alabama	State	41450	06-30-24
ANAB	Dept. of Defense ELAP	L2463	09-22-24
Arkansas DEQ	State	19-015-0	02-01-24
California	State	2939	06-30-23 *
Florida	NELAP	E87052	06-30-24
Georgia	State	E87052	06-30-24
Georgia (DW)	State	803	06-30-24
Guam	State	19-007R	04-17-24
Hawaii	State	<cert No.>	06-30-23 *
Illinois	NELAP	200022	11-30-23
Iowa	State	353	07-01-25
Kentucky (UST)	State	NA	06-30-24
Louisiana	NELAP	30690	06-30-24
Louisiana (All)	NELAP	30690	06-30-24
Louisiana (DW)	State	LA009	12-31-23
Maine	State	GA00006	09-25-24
Maryland	State	250	12-31-23
Massachusetts	State	M-GA006	06-30-24
Michigan	State	9925	06-30-24
Mississippi	State	<cert No.>	06-30-24
Nebraska	State	NE-OS-7-04	06-30-24
New Jersey	NELAP	GA769	06-30-24
New Mexico	State	GA00006	06-30-24
North Carolina (DW)	State	13701	07-31-23
North Carolina (WW/SW)	State	269	12-31-23
Pennsylvania	NELAP	68-00474	06-30-24
Puerto Rico	State	GA00006	01-01-24
South Carolina	State	98001	06-30-23 *
Tennessee	State	TN02961	06-30-24
Texas	NELAP	T1047004185-19-14	11-30-23
Texas	TCEQ Water Supply	T104704185	06-30-24
USDA	US Federal Programs	P330-18-00313	09-03-24
Virginia	NELAP	460161	06-14-24
Wyoming	State	8TMS-L	06-30-23 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NASA KSC SW3

Job ID: 670-22770-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET SAV
5030B	Purge and Trap	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 670-22770-1
Project/Site: NASA KSC SW3

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-22770-1	SW3-MW0032-047.5-20230706	Water	07/06/23 08:25	07/07/23 17:09
670-22770-2	SW3-MW0031-047.5-20230706	Water	07/06/23 08:43	07/07/23 17:09
670-22770-3	SW3-MW0030-040.0-20230706	Water	07/06/23 09:19	07/07/23 17:09
670-22770-4	SW3-MW0029-020.0-20230706	Water	07/06/23 09:53	07/07/23 17:09
670-22770-5	SW3-MW0035-047.5-20230706	Water	07/06/23 11:30	07/07/23 17:09
670-22770-6	SW3-MW0034-040.0-20230706	Water	07/06/23 11:55	07/07/23 17:09
670-22770-7	SW3-MW0033-030.0-20230706	Water	07/06/23 12:21	07/07/23 17:09

TETRA TECH

CHAIN OF CUSTODY

NO.

Project No: 112G09020	Facility: NASA KSC	Project Manger: Mark Jonnet	Phone: (412) 921-8622
Samplers: Natalie Fabbri, Natalie Volk		Field Ops. Leader: Chuck Sorden	Phone: (321) 591-7580
		Fed Ex Airbill Number:	

Laboratory Name and Contact: Eurofins Kaitlin Dylnicki

Address: 481 Newburyport Ave

City, State, Zip: Altamonte Springs, FL 32701

Date Year: 2023	Time	Sample ID	Location ID	Top Depth (FT)	Bottom Depth (FT)	Matrix (GW, SO, SW, QC)	Grab, Composite (G, C)	Total No. of Containers	ANALYSIS	Container Type: Plastic (P) or Glass (G)						Comments
										G	G					
										Preservative Used:						
										8260B (MOD) NASA PDL Custom	8260B (MOD) NASA PDL Custom					
07/06	0825	SW3-MW0032-047.5-20230706		45	50	GW	G	4		2	2					
07/06	0843	SW3-MW0031-047.5-20230706		45	50	GW	G	4		2	2					
07/06	0919	SW3-MW0030-040.0-20230706		35	45	GW	G	4		2	2					
07/06	0953	SW3-MW0029-020.0-20230706		15	25	GW	G	4		2	2					
07/06	1130	SW3-MW0035-047.5-20230706		45	50	GW	G	4		2	2					
07/06	1155	SW3-MW0034-040.0-20230706		35	45	GW	G	4		2	2					
07/06	1221	SW3-MW0033-030.0-20230706		25	35	GW	G	4		2	2					

670-22770 Chain of Custody

1. Relinquished By:	Date: 7-7-23	Time: 1445	1. Received By:	Date: 7/7/23	Time: 1445
2. Relinquished By:	Date:	Time:	2. Received By: MC	Date: 7/7/23	Time: 1632

Comments: 4-9 / 4.4

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22770-1

Login Number: 22770

List Number: 1

Creator: Clerisier, Meline

List Source: Eurofins Orlando

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 670-22770-1

Login Number: 22770
List Number: 2
Creator: Harley, Tynisha

List Source: Eurofins Savannah
List Creation: 07/11/23 12:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX D

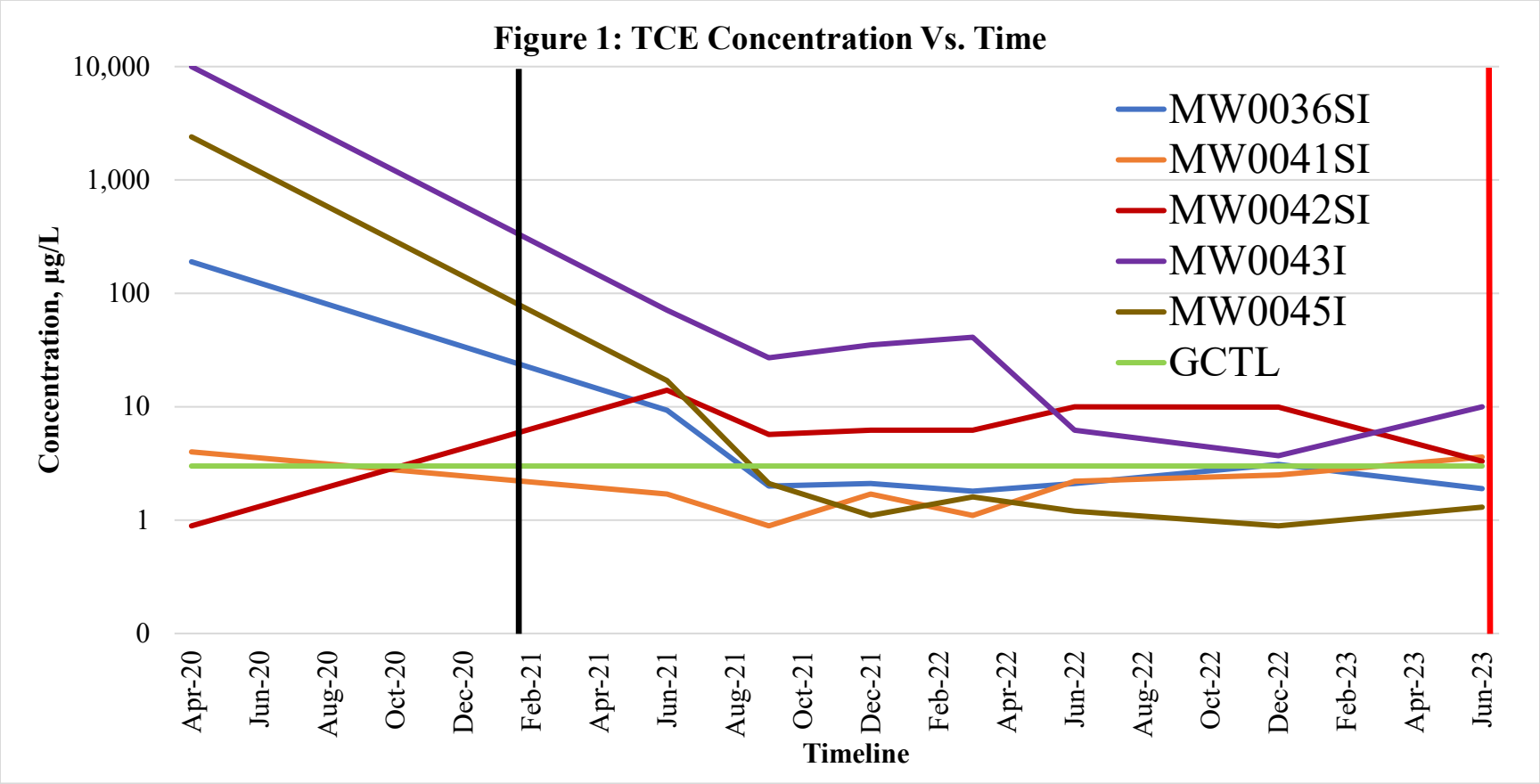
CONCENTRATION VS TIME FIGURES AND REDUCTION TABLES

Appendix D

Section 1: Paint and Oil Locker Southern Treatment Area Concentration vs Time Graphs

The following graphs are an overview of all wells on the monitoring network during Year 2 that have experienced a detection of TCE, cDCE or VC since the interim measure was implemented. Baseline sampling occurred in April 2020.

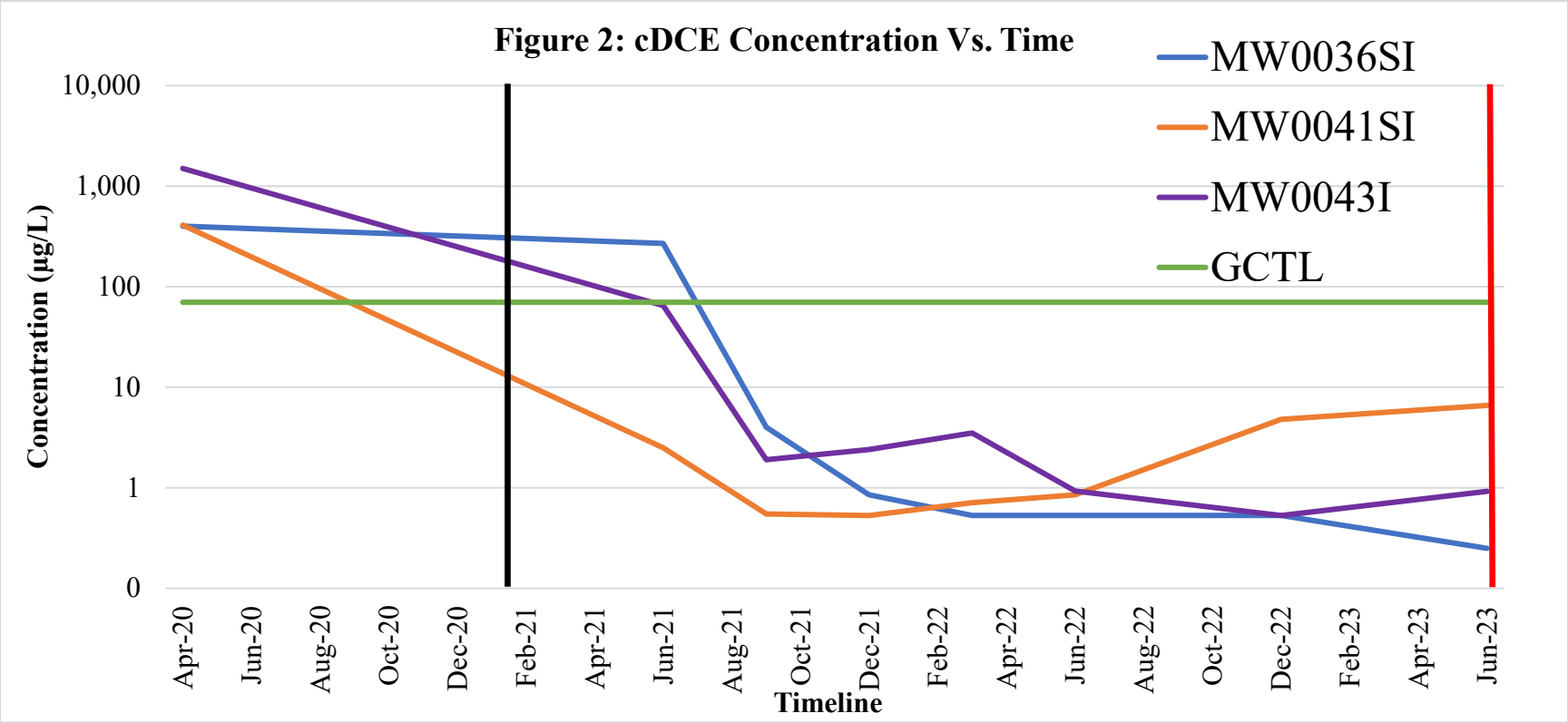
Appendix D



Notes:

- Black vertical line indicates when air sparge system was started (January 2021) while the Red vertical line indicates when it was turned off (June 2023).
- Log scale used for a better visualization due to the wells having significant concentration differences at baseline compared to subsequent events.
- Florida Department of Environmental Protection ground water concentration target level of trichloroethene (TCE) = 70 µg/L. Horizontal green line shown in figure.

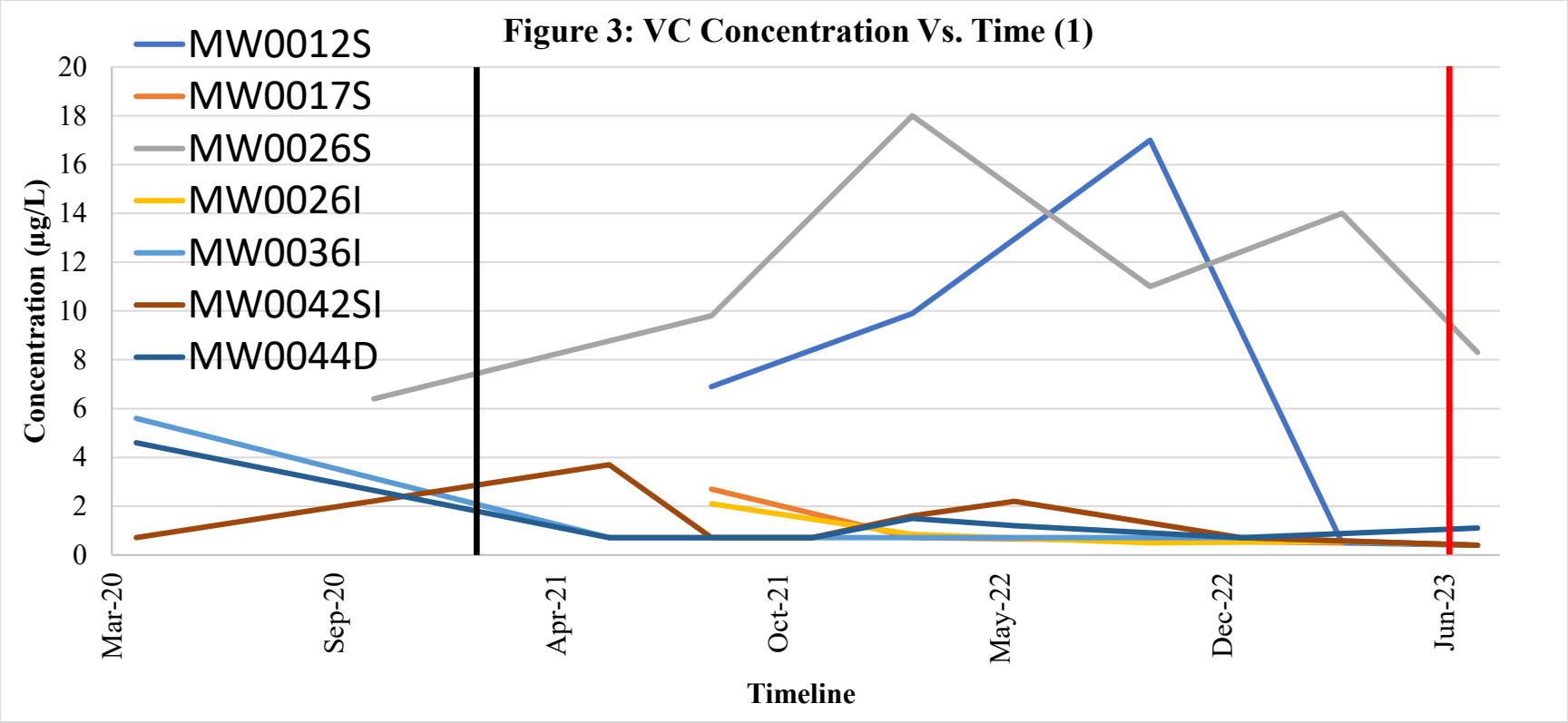
Appendix D



Notes:

- Black vertical line indicates when air sparge system was started (January 2021) while the Red vertical line indicates when it was turned off (June 2023).
- Log scale used for a better visualization due to the wells having significant concentration differences at baseline compared to subsequent events.
- Florida Department of Environmental Protection ground water concentration target level of cis–1,2-dichloroethene (cDCE) = 70 µg/L. Horizontal green line shown in figure.

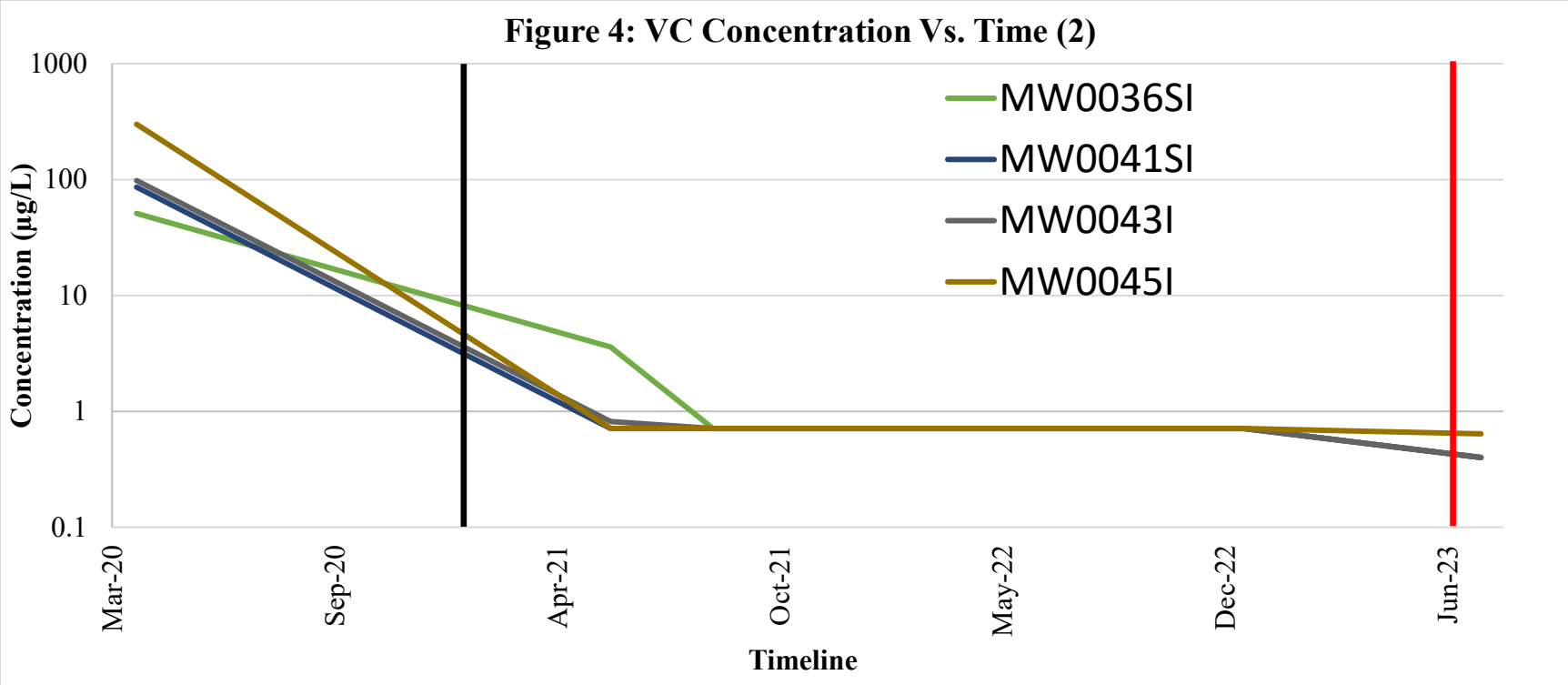
Appendix D



Notes:

- Black vertical line indicates when air sparge system was started (January 2021) while the Red vertical line indicates when it was turned off (June 2023).
- Florida Department of Environmental Protection ground water concentration target level of Vinyl Chloride (VC) = 1 µg/L. (Not shown in Figure)

Appendix D



Notes:

- Black vertical line indicates when air sparge system was started while the Red vertical line indicates when it was turned off.
- Log scale used for a better visualization due to the wells having significant concentration differences at baseline compared to subsequent events.
- Florida Department of Environmental Protection ground water concentration target level of Vinyl Chloride (VC) = 1 µg/L. (Not shown in Figure)

Section 2: Paint and Oil Locker Southern Treatment Area Reduction Tables

The following tables show all the wells sampled during the IM along with the change in concentration from baseline (or when first sampled) compared to each subsequent event up until July 2022. Tables were generated for TCE (Table D-1), cDCE Table (D-2) and VC (Table D-3).

Table D-1 TCE Reduction Table

Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Performance Monitoring Event																	
		April-20	June-21		September-21		December-21		March-22		June-22		October-22		December-22		March-23		July-23	
		TCE (µg/L)	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction	TCE (µg/L)	Concentration Reduction
Southern Treatment Area Plume Monitoring Network (BOLDED = Centerline Wells)																				
MW0008S	5-10	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0011S	10-15	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012S	11-16	NS	NS	NV	3.4	NV	NS	NV	1.3 I	62%	NS	NV	2.0	41%	NS	NV	0.36 I	89%	0.27 I	92%
MW0017S	11-16	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0018S	8-13	0.89 U	1.2 J	-170%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0026S	5-15	NS	NS	NV	2.5	24%	NS	NV	2.3 I	30%	NS	NV	2.5 QU	62%	NS	NV	1.3 I	61%	1.1	67%
MW0028S	7-17	NS	NS	NV	1.3 I	NV	NS	NV	0.91 I	30%	NS	NV	1.1	15%	NS	NV	0.27 I	79%	0.20 U	92%
MW0043S	10-20	**15**	2.8	81%	0.89 U	94%	0.89 U	97%	0.89 U	97%	0.89 U	97.03%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045S	10-20	0.89 U	3.4	-664%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0014SI	18-23	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0035SI	18-23	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	0.50 U	44%	NS	NV	0.15 U	83%	0.20 U	78%
MW0036SI	18-23	**190**	**9.3 I**	95%	2 I	99%	2.1 I	99%	1.8 I	99%	2.1 I	99%	NS	NV	3.1	98%	NS	NV	1.9	99%
MW0041SI	18-23	**4 I**	1.7 I	58%	0.89 U	89%	1.7 I	58%	1.1 I	73%	2.2 I	45%	NS	NV	2.5	38%	NS	NV	**3.6**	10%
MW0042SI	18-23	0.89 U	**14**	-3046%	**5.7**	-1181%	**6.2**	-1293%	**6.2**	-1293%	**10**	-2147%	NS	NV	**9.9**	-2125%	NS	NV	3.3	-642%
MW0008I	25-30	0.89 U	0.89 U	0.00%	0.89 U	0.00%	1.2 I	-170%	1.9 I	-327%	0.89 U	0.00%	NS	NV	0.89 U	0.00%	NS	NV	0.20 U	78%
MW0011I	25-30	**130**	0.89 U	100%	1.3 I	99%	0.89 U	100%	0.89 U	100%	0.89 U	100%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012I	28-33	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0014I	25-30	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0022I	25-30	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0026I	25-30	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	0.50 U	44%	NS	NV	0.15 U	83%	0.20 U	78%
MW0028I	27-32	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	0.50 U	44%	NS	NV	0.15 U	83%	0.20 U	78%
MW0036I	18-23	0.89 U	1.7 I	-282%	2.1 I	-372%	2 I	-125%	1.5 I	-237%	3.3	-642%	NS	NV	2.4	-439%	NS	NV	1.7	-282%
MW0043I	20-30	**10,000**	**71**	99%	**27**	100%	**35**	100%	**41**	100%	**6.2**	100%	NS	NV	**3.7**	100%	NS	NV	**10**	100%
MW0044I	20-30	**16**	0.89 U	97%	0.89 U	97%	0.89 U	97%	0.89 U	97%	0.89 U	97%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045I	20-30	**2,400**	**17**	99%	2.1 I	100%	1.1 J	100%	1.6 J	100%	1.2 I	100%	NS	NV	0.89 U	100%	NS	NV	1.3 I	100%
MW0014ID	32-37	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	0.50 U	44%	NS	NV	0.15 U	83%	0.79 U	11%
MW0018D	38-43	**40**	0.89 U	99%	0.89 U	99%	0.89 U	99%	0.89 U	0.00%	0.89 U	99%	NS	NV	NS	NV	NS	NV	NS	NV
MW0022D	40-45	NS	NS	NV	0.89 U	NV	NS	NV	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	0.15 U	83%	NS	NV
MW0043D	30-40	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0044D	30-40	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	1.0	-125%	NS	NV	1.5 I	-237%
MW0045D	30-40	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046D	30-40	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047D	30-40	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046DD	40-50	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047DD	40-50	0.89 U	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	0.89 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
Centerline Well Geometric Mean (µg/L)		3.3	1.3	62%	1.6	51%	0.81	75%	0.82	75%	0.76	77%	NV	NV	1.8	44%	NV	NV	1.5	56%

Notes:

Black highlighting indicates concentrations that exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for TCE, 300 µg/L

Green highlighting indicates wells sampled during perfomance monitoring event.

Bolding indicates concentrations that exceed State of Florida Groundwater Cleanup Target Level for TCE, 3 µg/L

No centerline wells sampled in October 2022 and March 2023. Although centerline wells sampled in Decemeber and July 2022, not enough data points were collected to compare to baseline. June 2022 event is the most accurate to indicate the airsparge percent reduction in centerline wells.

Due to the continuous optimization of the monitoring network, wells not sampled during baseline, percent reduction was calculated from the first time the well was sampled.

MW0026S sampled for the first time in November 2020, TCE result was 3.3 µg/L.

POL = Paint and Oil Locker

TCE = Trichloroethene

µg/L = micrograms per liter

bls = Below land surface

NS = Not Sampled

NV = No Value

I = Value is between method detection limit and practical quantitation limit

J = The result was an estimated value with an unknown bias

Q = Sample held beyond accepted holding time

U = Result below laboratory method detection limit

Table D-2 cDCE Reduction Table

Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Performance Monitoring Event																	
		April-20	June-21		September-21		December-21		March-22		June-22		October-22		December-22		March-23		July-23	
		cDCE (µg/L)	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction	cDCE (µg/L)	Concentration Reduction
Southern Treatment Area Plume Monitoring Network (BOLDED = Centerline Wells)																				
MW0008S	5-10	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0011S	10-15	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012S	11-16	NS	NS	NV	54	NV	NS	NV	35	35%	NS	NA	28	48%	NS	NV	2.0	96%	0.88 I	98%
MW0017S	11-16	NS	NS	NV	0.53 U	NV	NS	NV	0.53 U	-47%	NS	NA	NS	NV	NS	NV	0.20 U	15%	NS	NV
MW0018S	8-13	0.53 U	0.63 J	-138%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0026S	5-15	NS	NS	NV	66	-43%	NS	NV	**140**	-204%	NS	NA	**100 Q**	-117%	NS	NV	**110**	-139%	**100**	-117%
MW0028S	7-17	NS	NS	NV	0.53 U	NV	NS	NV	0.94 I	-255%	NS	NA	0.93 I	-251%	NS	NV	0.33 I	-25%	0.25 U	53%
MW0043S	10-20	8.6	8	7.0%	0.53 U	97%	0.53 U	97%	0.53 U	97%	0.53 U	97%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045S	10-20	0.53 U	1.4 J	-428%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NA	NV
MW0014SI	18-23	NS	NS	NV	0.53 U	NV	NS	NV	0.9 I	-240%	NS	NA	NS	NV	NS	NV	0.69 I	-160%	NA	NV
MW0035SI	18-23	NS	NS	NV	1.8 I	NV	NS	NV	2.3 I	-28%	NA	NA	1.9	-5.6%	NS	NV	1.7	5.6%	0.94 I	48%
MW0036SI	18-23	**400**	**270**	33%	4	99%	0.85 J	100%	0.53 U	100%	0.53 U	100%	NS	NV	0.53 U	100%	NS	NV	0.25 U	100%
MW0041SI	18-23	**410**	2.5	99%	0.55 I	100%	0.53 U	100%	0.71 J	100%	0.85 I	100%	NS	NV	4.8	99%	NS	NV	6.6	98%
MW0042SI	18-23	0.53 U	44	-16504%	49	-18391%	33	-12353%	19	-7070%	23	-8579%	NS	NV	37	-13862%	NS	NV	7.2	-2617%
MW0008I	25-30	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.83 I	-213%	1.0 I	-277%	1.6 I	-504%	NS	NV	2.4	-806%	NS	NV	0.25 U	53%
MW0011I	25-30	**600**	0.53 U	100%	0.53 U	100%	0.53 U	100%	0.53 U	100%	0.53 U	100%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012I	28-33	NS	NS	NV	0.53 U	NV	NS	NV	0.53 U	0.00%	NS	NA	NS	NV	NS	NV	0.3 I	-28%	NS	NV
MW0014I	25-30	NS	NS	NV	0.55 I	NV	NS	NV	0.64 J	-16%	NA	NA	NS	NV	NS	NV	0.21 I	62%	NS	NV
MW0022I	25-30	NS	NS	NV	0.53 U	NV	NS	NV	0.53 U	0.00%	NA	NA	NS	NV	NS	NV	0.20 U	62%	NS	NV
MW0026I	25-30	NS	NS	NV	2 I	NV	NS	NV	1.8 I	10%	NA	NA	2.2	-10%	NS	NV	2.1	-5.0%	1.8	10%
MW0028I	27-32	NS	NS	NV	0.53 U	NV	NS	NV	0.53 U	0.00%	NA	NA	0.71 I	-168%	NS	NV	0.32 I	-21%	0.71 I	-168%
MW0036I	25-30	1 I	2.8	-180%	20	-1900%	7	-600%	1.3 I	-30%	4.5	-350%	NS	NV	2.7	-170%	NS	NV	1.4	-40%
MW0043I	20-30	**1,500**	65	96%	1.9 I	100%	2.4 J	100%	3.5	100%	0.93 I	100%	NS	NV	0.53 U	100%	NS	NV	0.92 I	100%
MW0044I	20-30	28	0.53 J	98%	0.53 U	99%	0.53 U	99%	0.53 U	99%	0.53 U	99%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045I	20-30	**830**	2.1 J	100%	0.53 U	100%	0.74 J	100%	0.53 U	100%	0.53 U	100%	NS	NV	0.53 U	100%	NS	NV	0.71 U	100%
MW0014ID	32-37	NS	NS	NV	0.54 I	NV	NS	NV	0.93 I	-72%	NS	NA	0.57 I	-5.6%	NS	NV	0.36 I	33%	0.71 I	-31%
MW0018D	38-43	**96**	0.53 U	100%	0.53 U	100%	0.53 U	100%	0.53 U	100%	0.89 U	100%	NS	NV	NS	NV	NS	NV	NS	NV
MW0022D	40-45	NS	NS	NV	0.53 U	NV	NS	NV	0.53 U	0.00%	NS	NA	NS	NV	NS	NV	0.20 U	62%	NS	NV
MW0043D	30-40	0.53 U	2.0 J	-655%	1.6 J	-504%	0.53 U	0.00%	0.53 U	0.00%	0.89 U	-68%	NS	NV	NS	NV	NS	NV	NS	NV
MW0044D	30-40	3.6	1.6 1	56%	2.0 I	44%	1.4 1	61%	1.8 I	50%	1.3 1	64%	NS	NV	0.64 I	82%	NS	NV	1.4	61%
MW0045D	30-40	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046D	30-40	15	0.53 U	98%	0.53 U	98%	0.53 U	98%	0.53 U	98%	0.53 U	98%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047D	30-40	0.75 I	0.53 U	65%	0.53 U	65%	0.53 U	29%	0.53 U	65%	0.53 U	65%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046DD	40-50	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047DD	40-50	0.53 U	0.53 U	0.00%	0.53 U	0.00%	0.53 U	0.00%	0.53 U	-47%	0.53 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
Centerline Well Geometric Mean		4.3	1.3	70%	0.58	86%	0.53	88%	0.47	89%	0.50	88%	NV	NV	1.4	68%	NV	NV	0.89	79%

Notes:

Black highlighting indicates concentrations that exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for cDCE, 700 µg/L

Green highlighting indicates wells sampled during perfomance monitoring event.

Bolding indicates concentrations exceed State of Florida Groundwater Cleanup Target Level for cDCE, 70 µg/L

No centerline wells sampled in October 2022 and March 2023. Although centerline wells sampled in Decemeber and July 2022, not enough data points were collected to compare to baseline. June 2022 event is the most accurate to indicate the airsparge percent reduction in centerline wells.

Due to the continuous optimization of the monitoring network, wells not sampled during baseline, percent reduction was calculated from the first time the well was sampled.

MW0026S sampled for the first time in November 2020, cDCE result was 46 µg/L.

POL = Paint and Oil Locker

cDCE = cis-1,2-Dichloroethene

µg/L = micrograms per liter

bls = Below land surface

NS = Not Sampled

NV = No Value

Q = Sample held beyond accepted holding time

J = The result was an estimated value with an unknown bias

I = Value is between method detection limit and practical quantitation limit

U = Result below laboratory method detection limit

Table D-3 VC Reduction Table

Southern Treatment Area Plume Centerline Monitoring Well (POL-)	Screened Interval (feet bls)	Baseline Prior to System Startup	Performance Monitoring Event																	
		April-20	June-21		September-21		December-21		March-22		June-22		October-22		December-22		March-23		July-23	
		VC (µg/L)	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction	VC (µg/L)	Concentration Reduction
Southern Treatment Area Plume Monitoring Network (BOLDED = Centerline Wells)																				
MW0008S	5-10	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0011S	10-15	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012S	11-16	NS	NS	NV	**6.9**	NV	NS	NV	**9.9**	-187%	NS	NV	**17**	-146%	NS	NV	0.50 U	96%	0.40 UJ3	97%
MW0017S	11-16	NS	NS	NV	**2.7**	NV	NS	NV	0.71 U	87%	NS	NV	NS	NV	NS	NV	0.50 U	91%	NS	NV
MW0018S	8-13	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0026S	5-15	NS	NS	NV	**9.8**	-53%	NS	NV	**18**	-181%	NS	NV	**11 Q**	-72%	NS	NV	**14**	-119%	**8.3**	-30%
MW0028S	7-17	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	0.50 U	30%	NS	NV	0.50 U	30%	0.40 UJ3	44%
MW0043S	10-20	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045S	10-20	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0014SI	18-23	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	0.50 U	30%	NS	NV
MW0035SI	18-23	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	0.50 U	30%	NS	NV	0.50 U	30%	0.40 UJ3	44%
MW0036SI	18-23	**51**	3.6 U	96%	0.71 U	99%	0.71 U	99%	0.71 U	99%	0.71 U	99%	NS	NV	0.71 U	99%	NS	NV	0.40 UJ3	100%
MW0041SI	18-23	**86**	0.71 U	100%	0.71 U	100%	0.71 U	100%	0.71 U	99%	0.71 U	100%	NS	NV	0.71 U	100%	NS	NV	0.40 UJ3	100%
MW0042SI	18-23	0.71 U	**3.7**	-942%	0.71 U	0.00%	0.71 U	0.00%	**1.6 J**	-351%	**2.2 I**	-520%	NS	NV	0.71 U	0.00%	NS	NV	0.40 UJ3	44%
MW0008I	25-30	0.93 I	0.71 U	62%	0.71 U	62%	0.71 U	62%	0.71 U	62%	0.71 U	62%	NS	NV	0.71 U	62%	NS	NV	0.40 UJ3	78%
MW0011I	25-30	**130**	0.71 U	99%	0.71 U	100%	0.71 U	100%	0.71 U	100%	0.71 U	100%	NS	NV	NS	NV	NS	NV	NS	NV
MW0012I	28-33	NS	NS	NV	0.71 U	NV	NS	NV	0.76 I	-114%	NS	NV	NS	NV	NS	NV	0.52 I	-46%	NS	NV
MW0014I	25-30	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	0.50 U	30%	NS	NV
MW0022I	25-30	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	0.50 U	30%	NS	NV
MW0026I	25-30	NS	NS	NV	**2.1 I**	NV	NS	NV	0.84 I	60%	NS	NV	0.50 U	88%	NS	NV	0.56 I	73%	0.40 U	90%
MW0028I	27-32	NS	NS	NV	1.2 I	NV	NS	NV	1.4 I	-17%	NS	NV	0.50 U	79%	NS	NV	0.64 I	47%	0.40 U	83%
MW0036I	18-23	**5.6**	0.71 U	94%	0.71 U	94%	0.71 U	94%	0.71 U	94%	0.71 U	94%	NS	NV	0.71 U	94%	NS	NV	0.40 UJ3	96%
MW0043I	20-30	**98 I**	0.82 J	99%	0.71 U	100%	0.71 U	100%	0.71 U	100%	0.71 U	100%	NS	NV	0.71 U	100%	NS	NV	0.40 UJ3	100%
MW0044I	20-30	**3.4**	0.71 U	90%	0.71 U	90%	0.71 U	90%	0.71 U	90%	0.71 U	90%	NS	NV	NS	NV	NS	NV	NS	NV
MW0045I	20-30	**300**	0.71 U	100%	0.71 U	100%	0.71 U	100%	0.71 U	100%	0.71 U	100%	NS	NV	0.71 U	100%	NS	NV	0.64 U	100%
MW0014ID	32-37	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	0.50 U	30%	NS	NV	0.50 U	30%	0.64 U	9.9%
MW0018D	38-43	**9.8**	0.71 U	96.38%	0.71 U	96%	0.71 U	96%	0.71 U	96%	0.71 U	96%	NS	NV	NS	NV	NS	NV	NS	NV
MW0022D	40-45	NS	NS	NV	0.71 U	NV	NS	NV	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	0.50 U	30%	NS	NV
MW0043D	30-40	0.71 U	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	0.71 U	0.00%	NS	NV	NS	NV	NS	NV	NS	NV
MW0044D	30-40	**4.6**	0.71 U	92%	0.71 U	92%	0.71 U	92%	**1.5 J**	67%	1.2 I	74%	NS	NV	0.71 U	92%	NS	NV	1.1 I	76%
MW0045D	30-40	**2.9**	0.71 U	88%	0.71 U	88%	0.71 U	88%	0.71 U	88%	0.71 U	88%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046D	30-40	**32**	0.71 U	99%	0.71 U	99%	0.71 U	99%	0.71 U	99%	0.71 U	99%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047D	30-40	**50**	0.71 U	99%	0.71 U	99%	0.71 U	99%	0.71 U	99%	0.71 U	99%	NS	NV	NS	NV	NS	NV	NS	NV
MW0046DD	40-50	0.96 I	0.71 U	63%	0.71 U	63%	0.71 U	63%	0.71 U	63%	0.71 U	63%	NS	NV	NS	NV	NS	NV	NS	NV
MW0047DD	40-50	1.2 I	0.71 U	70%	0.71 U	70%	0.71 U	70%	0.71 U	70%	0.71 U	70%	NS	NV	NS	NV	NS	NV	NS	NV
Centerline Well Geometric Mean		4.3	0.44	90%	0.36	92%	0.36	92%	0.41	91%	0.41	91%	NV	NV	0.36	92%	NV	NV	0.27	94%

Notes:

Black highlighting indicates concentrations that exceed the Florida Department of Environmental Protection Natural Attenuation Default Concentration for VC, 100 µg/L

Green highlighting indicates wells sampled during perfomance monitoring event.

Bolding indicates concentrations exceed State of Florida Groundwater Cleanup Target Level for VC, 1 µg/L

No centerline wells sampled in October 2022 and March 2023. Although centerline wells sampled in Decemeber and July 2022, not enough data points were collected to compare to baseline. June 2022 event is the most accurate to indicate the airsparge percent reduction in centerline wells.

Due to the continuous optimization of the monitoring network, wells not sampled during baseline, percent reduction was calculated from the first time the well was sampled.

MW0026S sampled for the first time in November 2020, VC result was 6.4 µg/L.

POL = Paint and Oil Locker

VC = Vinyl Chloride

µg/L = micrograms per liter

bls = Below land surface

NS = Not Sampled

NV = No Value

Q = Sample held beyond accepted holding time

J3 = Estimated value; value may not be accurate. Spike recovery or RPD outside of Criteria.

J = The result was an estimated value with an unknown bias

I = Value is between method detection limit and practical quantitation limit

U = Result below laboratory method detection limit

APPENDIX E

MONITORING WELL INSTALLATION LOG SHEETS AND SURVEY REPORT

03/22/2023 **STP1/POL/SW3** **112G09581/112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Dave Longino	(DL)	Driller	GPI
	Jared Link	(JL)	Driller	GPI
	Kevin Northington	(KN)	tech	GPI

Weather: Sunny – 73 degrees F

PPE: Level D

Health and Safety (HAS): Topics – SSHASP; PPE; IDW

Objective: Begin STP1/SW3/POL Monitoring Well (MW) Installation

0800: CS on base; GPI at Orlando Office picking up rig and materials for site
0900: GPI departs Orlando for KSC
1000: JL on site at STP1 unloading equipment; DL heading to Pad A to retrieve box truck
1030: DL on site; HAS Meeting; Daily prep
1115: GPI offsite for lunch
1205: GPI on site; setting up on STP1-002 Location (MWs STP1-MW0003 and STP1-MW0004; hand clear 5'
1235: Drilling Commenced on STP1-MW0004; setting well screen 13'-18'
1245: Setting well 18' TD
1255: Well set; grouting borehole; Slight over pour on 20/30 sand; see below

STP1-MW0004	
Screen	18'-13'
20/30 Silica Sand	18'-11' (1bag)
30/65 Silica Sand	11'-9' (0.5 bag)
Portland Cement	To surface

1305: Installation Complete; setting up on STP1-MW0003; moving approximately 3' southeast towards swale. Hand clear 5'
1315: Drilling Commenced
1320: Setting well 11' TD
1330: Well set; grouting borehole

STP1-MW0003	
Screen	1'-11'
20/30 Silica Sand	11'-1' (2 bags)
30/65 Silica Sand	1'-0.5' (0.5 bags)
Portland Cement	To surface

1335: Installation Complete; GPI laying pads at wells
1430: Pad Installation complete on MWs0003 and 0004; Tt/GPI offsite to 39A to retrieve pipe rack



03/23/2023 **STP1/POL/SW3** **112G09581/112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Dave Longino	(DL)	Driller	GPI
	Jared Link	(JL)	Driller	GPI
	Kevin Northington	(KN)	tech	GPI

Weather: Sunny – 73 degrees F
PPE: Level D
Health and Safety (HAS): Topics – SSHASP; PPE; IDW
Objective: Continue POL/SW3 LTM and STP1 MW Installation

0915: Tt/GPI on site; HAS Meeting; daily prep; mobilizing to SW3-MW0029, MW0030, and MW0031 Location along canal
1015: Arrive at Location; unloading equipment, materials, and tooling; DL Getting water in truck for rig
1030: DL on site; Set up on SW3-MW0031; proposed screen depth is 45' to 50'; hand clear 5'
1050: Drilling Commenced
1115: Setting well screen 45' to 50'
1130: Well set; slight overpour on 20/30 sand; GPI taking lunch; will grout when returning

SW3-MW0031	
Screen	45'-50'
20/30 Silica Sand	50'-43' (1 bag)
30/65 Silica Sand	43'-41'
Portland Cement	To surface

1230: GPI on site; GPI sorting out 39A issues with GPI supervisor
1250: Grouting Borehole
1305: Installation Complete
1315: Drilling Commenced on SW3-MW0030; proposed screen depth is 35' to 45'; hand cleared 5'; well is positioned approximately 6' N of 31
1335: Setting well screen 40' to 45'
1350: Well set; grouting borehole

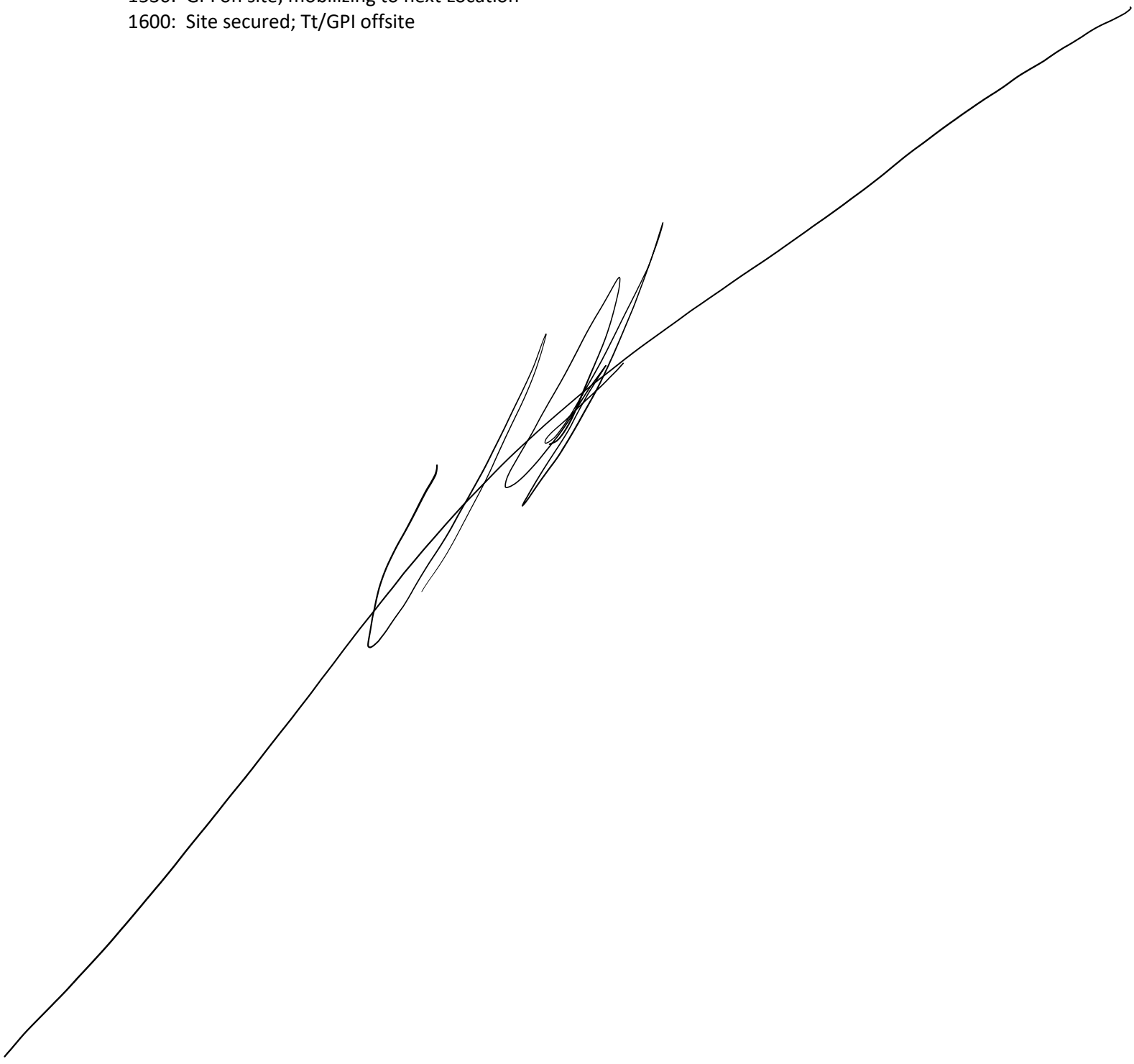
SW3-MW0030	
Screen	35'-45'
20/30 Silica Sand	45'-34' (2 Bags)
30/65 Silica Sand	34'-32' (0.5 bag)
Portland Cement	To surface

1405: Installation Complete on MW0030; setting up on SW3-MW0029; location is approximately 6' N of MW0030; hand clear 5'; proposed screen depth of 15'-25'
1415: Drilling Commenced
1430: Setting well screen 15' to 25'
1445: Well set; grouting borehole; see below for specifics



SW3-MW0029	
Screen	15’-25’
20/30 Silica Sand	25’-14’ (2 Bags)
30/65 Silica Sand	14’-12’ (0.5 Bag)
Portland Cement	To surface

1505: installation Complete; GPI getting water for rig
1530: GPI on site; mobilizing to next Location
1600: Site secured; Tt/GPI offsite



04/03/2023 **STP1/POL/SW3** **112G09581/112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Dave Longino	(DL)	Driller	GPI
	Christian Dodd	(CD)	Driller	GPI
	Tyree			

Weather: Sunny – 79 degrees F
PPE: Level D
Health and Safety (HAS): Topics – SSHASP; PPE; IDW
Objective: Continue POL/SW3 LTM MW Installation

0830: CS on base
0945: Tt/GPI on site; HAS Meeting; daily prep; mobilizing to SW3-MW0032; hand clear 5'; propose setting well screen 45' to 50'
1030: GPI offsite to get water for rig
1050: Set up on SW3-MW0032; hand clear 5'
1105: Drilling Commenced
1130: Setting well screen 45' to 50'
1145: Well set; GPI offsite for lunch; will grout when GPI returns

SW3-MW0032	
Screen	45'-50'
20/30 Silica Sand	50'-44' (1 bag)
30/65 Silica Sand	44'-42'
Portland Cement	To surface

1245: GPI on site; grouting borehole
1310: Intallation Complete
1320: Set up on Location STP1-004 (STP1-MW0007 and STP1-MW0008; hand clear 5'; proposed screen depths are MW007 (1'-11') and MW0008' (13' -18') Will drill the deeper well first
1330: Drilling Commenced on MW0008
1340: Setting well screen 13' to 18'
1350: Well set; grouting borehole

STP1-MW0008	
Screen	18'-13'
20/30 Silica Sand	18'-12' (1bag)
30/65 Silica Sand	12'-10' (0.5 bag)
Portland Cement	To surface

1400: Installation Complete
1405: Drilling Commenced on STP1-MW0007 Screened 1-11
1410: Phase II lightning warning in effect for KSC Industrial. Storm popped up out of no where
1520: Heavy rain and lightning; securing site
1530: Site secured; Tt/GPI offsite

04/04/2023 **STP1/POL/SW3** **112G09581/112G09020**

Personnel:	Chuck Sorden	(CS)	Geologist	Tt
	Dave Longino	(DL)	Driller	GPI
	Christian Dodd	(CD)	Driller	GPI
	Tyree Sanders	(TS)	Tech	GPI

Weather: Sunny – 66 degrees F
PPE: Level D
Health and Safety (HAS): Topics – SSHASP; PPE; IDW
Objective: Continue POL/SW3 LTM MW Installation

0715: Tt/GPI on site; HAS Meeting; daily prep; resuming drilling on STP1-MW0007; after speaking with Tt PM Mark Jonnet (MJ), CS will be adjusting shallow screen depth from 1-11 to 3-13 based on relative height above canal
0800: Drilling resumed on STP1-MW0007; setting well screen 3' to 13'
0820: Setting well 13' TD
0830: Installation Complete; deconning

STP1-MW0007	
Screen	3'-13'
20/30 Silica Sand	13'-2' (2 bags)
30/65 Silica Sand	2'-0.5' (0.5 bags)
Portland Cement	To surface

0845: Set up on SW3-MW0033-MW0035; hand clear 5'; propose setting screens 25-35' (MW0033); 35'-45' (MW0034), and 45'-50' (MW0035); installing deepest well first and to the west, shallow to the east
0855: Drilling Commenced on STP1-MW0035
0915: Setting well Screen 45' to 50'
0925: Well set; grouting borehole

SW3-MW0035	
Screen	45'-50'
20/30 Silica Sand	50'-44' (1 bag)
30/65 Silica Sand	44'-42'
Portland Cement	To surface

0940: Installation Complete; deconning
0950: Drilling Commenced on SW3-MW0034; previously hand cleared 5'; propose setting well screen 35' to 45'
1005: Setting well screen 35'45'
1015: Well set; grouting borehole

SW3-MW0034	
Screen	35'-45'
20/30 Silica Sand	45'-34' (2 Bags)
30/65 Silica Sand	34'-32' (0.5 bag)
Portland Cement	To surface



1025: Installation Complete; GPI offsite getting water for rig after Decon
1045: GPI on site
1055: Drilling Commenced on SW3-MW0033; previously hand cleared 5'; propose setting well screen 25' to 35'
1110: Setting well screen 25' to 35'
1125: Well set; grouting borehole

SW3-MW0033	
Screen	25'-35'
20/30 Silica Sand	35'-24' (2 Bags)
30/65 Silica Sand	24'-22' (0.5 Bag)
Portland Cement	To surface

1135: Installation Complete; deconning
1145: Set up on Location STP1-005 (MWs STP1-MW0009 [3'-13'] and STP1-MW0010 [13'-18']; hand clear locations 5'

1155: GPI offsite for lunch and to get water for rig
1240: GPI on site
1300: Drilling Commenced on STP-MW0010
1310: Setting well screen 13' to 18'
1315: Well set; grouting borehole

STP1-MW0010	
Screen	18'-13'
20/30 Silica Sand	18'-12' (1bag)
30/65 Silica Sand	12'-10' (0.5 bag)
Portland Cement	To surface

1320: Installation complete; Deconning
1325: Drilling Commenced on STP1-MW0009; setting well screen 3' to13'
1335: Setting well

STP1-MW0009	
Screen	3'-13'
20/30 Silica Sand	13'-2' (2 bags)
30/65 Silica Sand	2'-0.5' (0.5 bags)
Portland Cement	To surface

1345: Installation Complete; Deconning
1355: Set up on POL-MW0048 series; hand clear 5'; proposed screen depths are POL-MW0048I (25' – 35') and POL-MW0048D (35' – 45'); installing MW0048D first
1405: Drilling Commmenced on POL-MW0048D
1425: Setting well screen 35' to 45'



1440: Well set; grouting borehole

POL-MW0048D	
Screen	35’-45’
20/30 Silica Sand	45’-34’ (2 Bags)
30/65 Silica Sand	34’-32’ (0.5 bag)
Portland Cement	To surface

1450: Installation Complete on POL-MW0048D; deconning
1455: Drilling Commenced on POL-MW0048I; propose setting well screen 25’ to 35’
1510: Setting POL-MW0048I 25’ to 35’
1520: Well set; grouting borehole

POL-MW0048I	
Screen	25’-35’
20/30 Silica Sand	35’-24’ (2 Bags)
30/65 Silica Sand	24’-22’ (0.5 Bag)
Portland Cement	To surface

1535: Installation Complete
- Decon

1550: Set up on STP1-006 (STP1-MW0011 [3-13] and STP1-MW0012 [13-18]); hand clear 5’; GPI out of water; getting set up on the holes and getting set up for tomorrow to resume drilling
1620: Site secured; Tt/GPI offsite



4/12/2023 STP **112G09020**

Personnel:

Chuck Sorden	Geologist	Tetra Tech
Cory O'Brien	Geologist	Tetra Tech
Dave longing	Driller	GPI

Weather: Overcast low to mid 70s F windy intermittent light rain
PPE: Level D
Health and safety: IDW
Objective: monitoring well development
Equipment: Honda Transfer pump

0850: Cory arrives on site and met with Chuck and discussed the days objectives and start development on SW3-MW0029 water color brown
0922: end development on SW3-MW0029 water colorless approximately 5 gallons removed. Start development on SW3-MW0030 water color brown.
0955: End development on SW3-MW0030 water color is very light brown approximately 5 gallons removed start development on SW3-MW0031. Water color dark brown
1045: End development on SW3-MW0031. Approximately 10 gallons of water removed. Water color light brown.
1050: move to SW3-MW0032
1054: Start development on SW3-MW0032 water color is dark brown.
1125: finish development on SW3-MW0032 water is colorless. Approximately 5 gallons of water removed.
1130: move to STP1004 and start development on the western most well. Water color light brown
1155 : finish development on STP1-004 approximately 5 gallons removed. Water is colorless.
1200: drillers break for lunch.
1240: Back from lunch. Start development on STP1-004 eastern most well. Water color is dark brown.
1307: end development on STP1-004 eastern most well. Water is colorless.
1309; arrive at SW3-MW035 and set up for development
1313: start development on SW3-MW0035. Water color is light brown.
1345; end development on SW3-MW0035. Water is colorless. Approximately 5 gallons removed.
1350; start development on SW3-MW0034. Water color is dark brown.
1415: end development on SW3-MW0034. Water is colorless. Approximately 8 gallons of water removed.
1417: start development on SW3-MW0033. Water is cloudy white.
1436: end development on SW3-MW0033. Water is colorless. Approximately 10 gallons of water removed.
1438: move to STP1-005 location and set up equipment
1440; start development on STP1-005 western most well. Water color is cloudy white.
1505: finish development on STP1-005 western most well. Water is colorless approximately 10 gallons removed
1505: start development on STP1-005 easternmost well. Water color is cloudy white.
1530: finish development on STP-005 eastern most well. Water is colorless approximately 10 gallons removed. Move to MW48 eastern most well and set up equipment.
1540: start development on MW48 western most well. Water color is light brown.
1555: end development on MW48 western most well. Water is colorless. Approximately 10 gallons.
1556: start development on MW48 eastern most well. Water color is light brown.

1615: end development on MW48 eastern most well. Water is colorless. Approximately 7 gallons removed.
1620; development complete for the day
1628: go to CHP to unload and store equipment and prep for tomorrow.
1635: site secure
1636: TT and GPI off site.

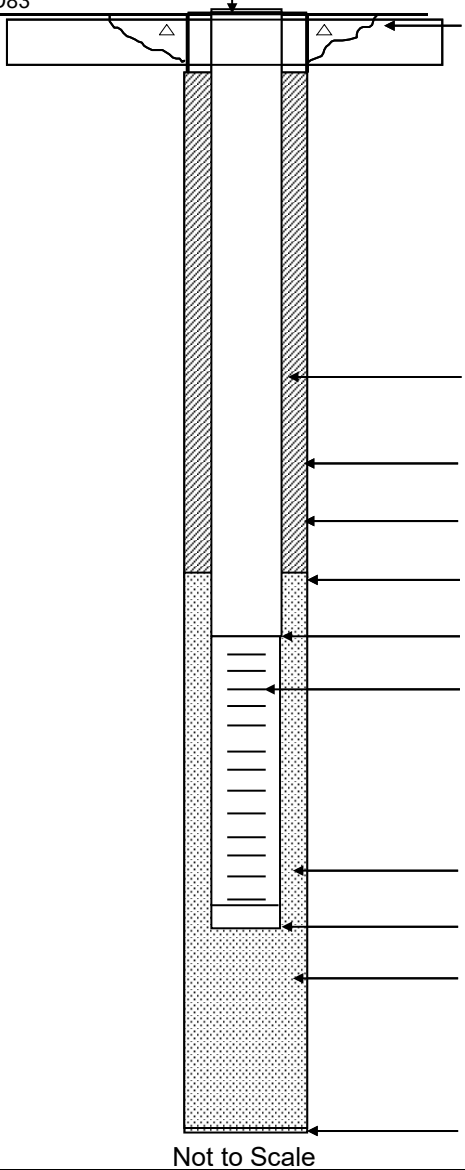
Tetra Tech, Inc.

WELL No.: SW3-MW0029

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0029
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	03/23/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1520197.02
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	765899.88

Ground Elevation = 9.0
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 8.68

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 12.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 14.0

Elevation / Depth of Top of Screen: / 15.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 25.0

Elevation / Depth of Bottom of Filter Pack: / 25.0

Type of Backfill Below Well: Undisturbed Native Soil

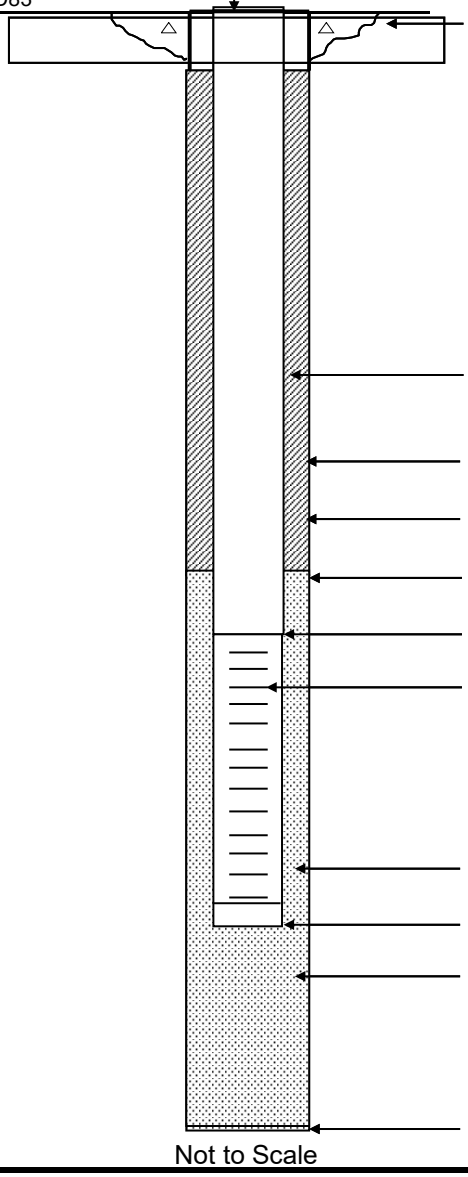
Elevation / Total Depth of Borehole: / 25.0

Tetra Tech, Inc.

WELL No.: SW3-MW0030

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0030
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	03/23/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1520191.36
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	765900.98



Ground Elevation = 9.0
Datum: NAD83

Not to Scale

Elevation of Top of Casing: / 8.83

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 32.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 34.0

Elevation / Depth of Top of Screen: / 35.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0

Elevation / Depth of Bottom of Filter Pack: / 45.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 45.0

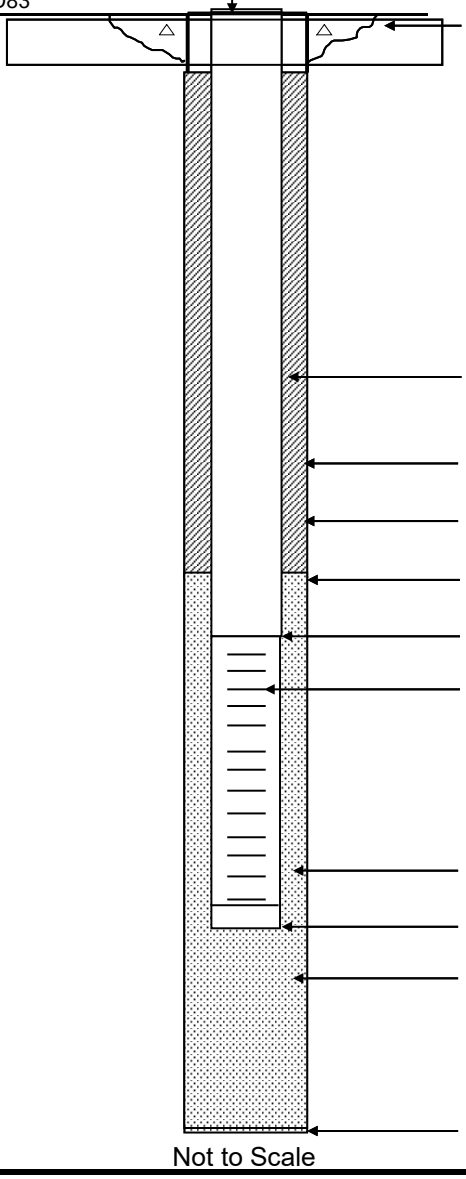
Tetra Tech, Inc.

WELL No.: SW3-MW0031

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0031
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	03/23/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1520185.24
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	765900.98

Ground Elevation = 9.0
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 8.91

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 41.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 43.0

Elevation / Depth of Top of Screen: / 45.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 50.0

Elevation / Depth of Bottom of Filter Pack: / 50.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 50.0

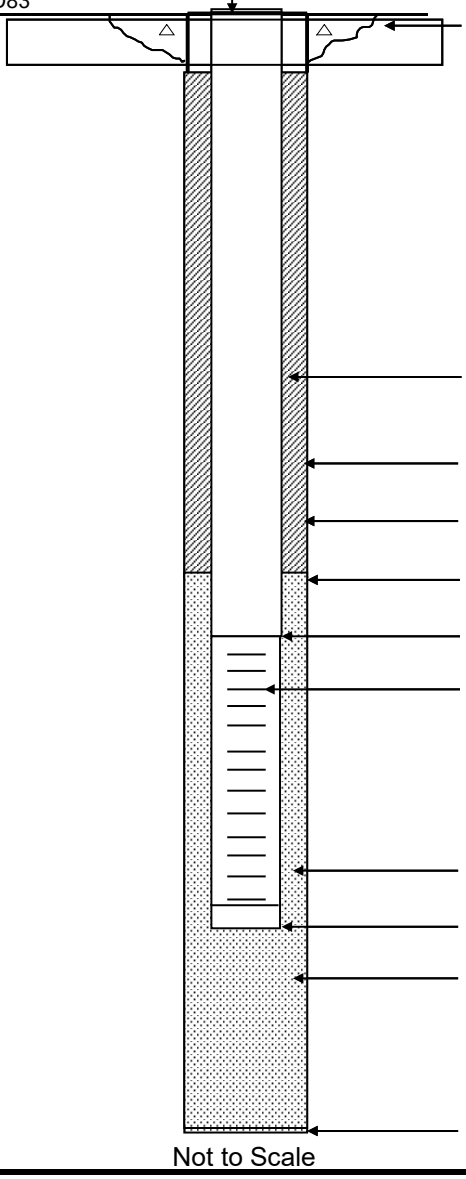
Tetra Tech, Inc.

WELL No.: SW3-MW0032

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0032
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/03/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1519865.41
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	765907.35

Ground Elevation = 8.2
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 8.05

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 42.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 44.0

Elevation / Depth of Top of Screen: / 45.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 50.0

Elevation / Depth of Bottom of Filter Pack: / 50.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 50.0

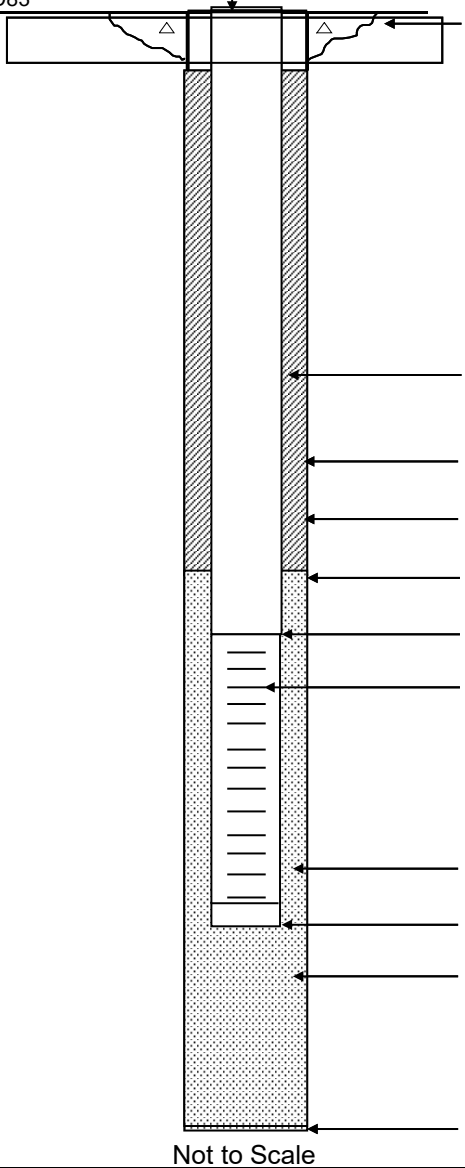
Tetra Tech, Inc.

WELL No.: SW3-MW0033

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0033
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/04/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1519886.48
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING;	766357.93

Ground Elevation = 7.5
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 7.37

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 22.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 24.0

Elevation / Depth of Top of Screen: / 25.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 35.0

Elevation / Depth of Bottom of Filter Pack: / 35.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 35.0

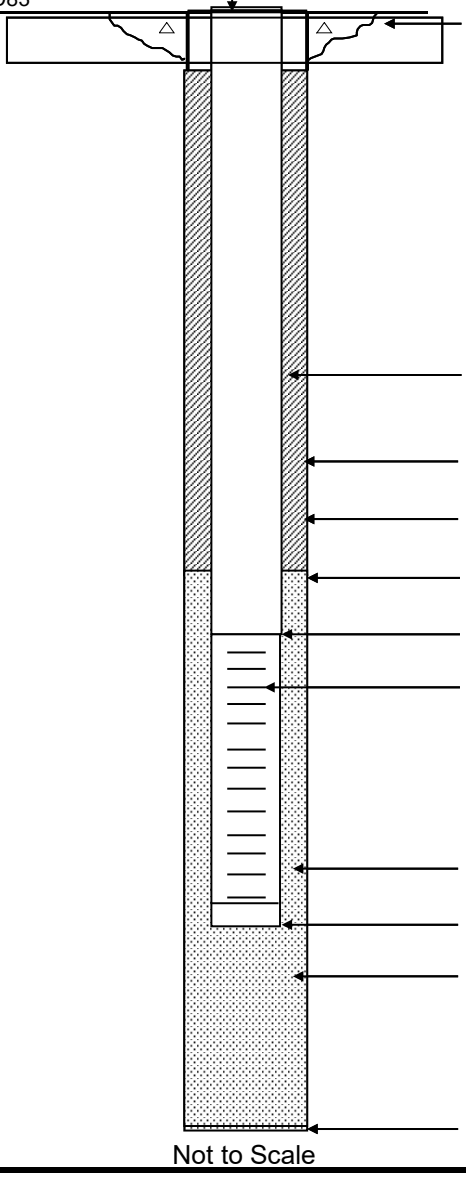
Tetra Tech, Inc.

WELL No.: SW3-MW0034

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0034
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/04/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1519886.52
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	766350.05

Ground Elevation = 7.5
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 7.39

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 32.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 34.0

Elevation / Depth of Top of Screen: / 35.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0

Elevation / Depth of Bottom of Filter Pack: / 45.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 45.0

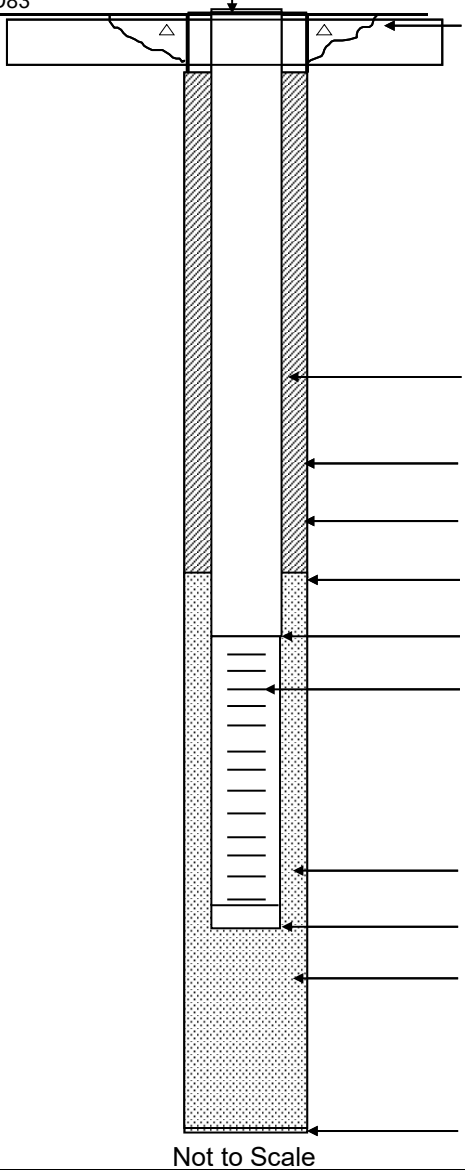
Tetra Tech, Inc.

WELL No.: SW3-MW0035

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	SW3-MW0035
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/04/23
SITE:	KSC-SW3	DRILLING METHOD:	Rotosonic	NORTHING:	1519886.79
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	766350.05

Ground Elevation = 7.5
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 7.57

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 41.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 43.0

Elevation / Depth of Top of Screen: / 45.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 50.0

Elevation / Depth of Bottom of Filter Pack: / 50.0

Type of Backfill Below Well: Undisturbed Native Soil

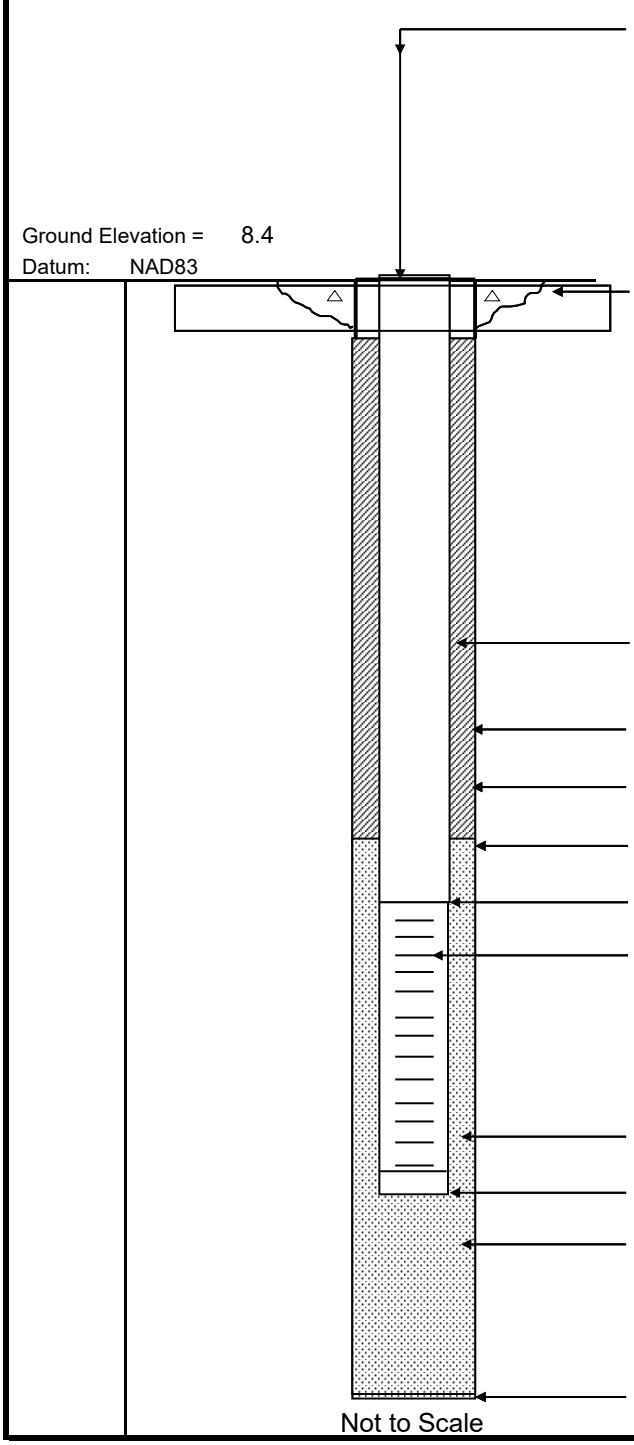
Elevation / Total Depth of Borehole: / 50.0

Tetra Tech, Inc.

WELL No.: POL-MW0048I

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	POL-MW0048I
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/04/23
SITE:	KSC-POL	DRILLING METHOD:	Rotosonic	NORTHING:	1519869.69
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	766910.14



Elevation of Top of Casing: / 8.39

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 22.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 24.0

Elevation / Depth of Top of Screen: / 25.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 35.0

Elevation / Depth of Bottom of Filter Pack: / 35.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 35.0

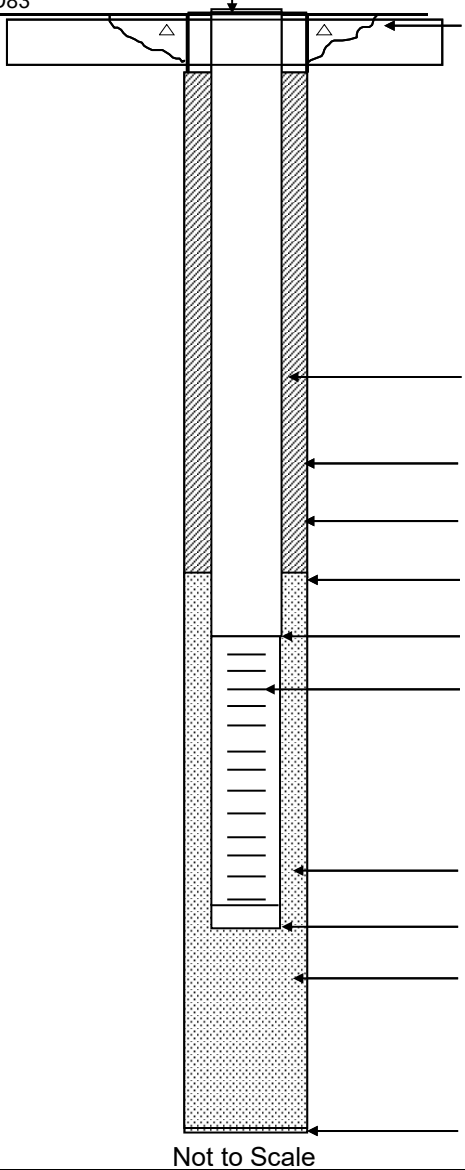
Tetra Tech, Inc.

WELL No.: POL-MW0048D

MONITORING WELL SHEET

PROJECT:	NASA-KSC	DRILLING Co.:	Drill Pro, LLC.	BORING No.:	POL-MW0048D
PROJECT No.:	112G09020	DRILLER:	Dave Longino	DATE COMPLETED:	04/04/23
SITE:	KSC-POL	DRILLING METHOD:	Rotosonic	NORTHING:	1519870.22
ENG/GEO:	Chuck Sorden	DEV. METHOD:	Pump	EASTING:	766906.58

Ground Elevation = 8.4
Datum: NAD83



Not to Scale

Elevation of Top of Casing: / 8.34

Length of Riser (ft): N/A - Flush Mount

Type of Surface Casing: N/A - Flush Mount

Type of Surface Seal: Concrete

Type of Riser: 1" Sch. 40 PVC

Borehole Diameter: 4

Type of Backfill: Type I Portland Cement/Bentonite

Elevation / Depth of Seal: / 32.0

Type of Seal: 30/65 Silica Sand

Elevation / Depth of Top of Filter Pack: / 34.0

Elevation / Depth of Top of Screen: / 35.0

Type of Screen: Pre-Packed Screen

Slot Size x Length: 0.010 x 10

Type of Filter Pack: 20/30 Silica Sand

Elevation / Depth of Bottom of Screen: / 45.0

Elevation / Depth of Bottom of Filter Pack: / 45.0

Type of Backfill Below Well: Undisturbed Native Soil

Elevation / Total Depth of Borehole: / 45.0

STATE OF FLORIDA PERMIT APPLICATION TO CONSTRUCT, REPAIR, MODIFY, OR ABANDON A WELL

Permit No:	MW-200271-1
Florida Unique ID	
Permit Stipulations Required (See Attached)	
MW-9	
62-524 Quad No. 3706SE	Delineation No.
CUP/WUP Application No.	

ABOVE THIS LINE FOR OFFICIAL USE ONLY

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

The water well contractor is responsible for completing this form and forwarding the permit application to the appropriate delegated authority where applicable.

1. **United States Of America** (*Owner, Legal Name if Corporation) | **1849 Nw C St Rm 5665** (*Address) | **Washington** (*City) | **DC** (*State) | **20240** (*Zip) | **4129218657** (*Telephone Number)

2. **Area south of 5th St SE & B Ave SE, KSC, FL 32953** (*Well Location – Address, Road Name or Number, City)

3. **23 3705-00-*-** (*Parcel ID No. (PIN) or Alternate Key (Circle One)) | Lot | Block | Unit

4. **5** (*Section or Land Grant) | **23S** (*Township) | **37E** (*Range) | **Brevard** (*County) | Subdivision | Check if 62-524: Yes **X** No

5. **James P Hinst** (*Water Well Contractor) | **9311** (*License Number) | **4074267885** (*Telephone Number) | **jim@drillprollc.com** (E-mail Address)

6. **2300 Silver Star Rd** (*Water Well Contractor's Address) | **Orlando** (City) | **FL** (State) | **32804-3310** (ZIP)

7. *Type of Work: **X** Construction ____ Repair ____ Modification ____ Abandonment ____ (*Reason for Repair, Modification, or Abandonment)

8. *Number of Proposed Wells **9**

9. *Specify Intended Use(s) of Well(s):

____ Domestic ____ Landscape Irrigation ____ Agricultural Irrigation ____ Site Investigation
____ Bottled Water Supply ____ Recreation Area Irrigation ____ Livestock **X** Monitoring
____ Public Water Supply (Limited Use/DOH) ____ Nursery Irrigation ____ Test
____ Public Water Supply (Community orNon-Community/DEP) ____ Commercial/Industrial ____ Earth-Coupled Geothermal
____ Class I Injection ____ Golf Course Irrigation ____ HVAC Supply
____ HVAC Return

Class V Injection: ____ Recharge ____ Commercial/Industrial Disposal ____ Aquifer Storage and Recovery ____ Drainage

Remediation: ____ Recovery ____ Air Sparge ____ Other (Describe) ____

Other (Describe) ____ (Note: Not all types of wells are permitted by a given permitting authority)

Date Stamp
Confirmation# **816648**
Date: **03/30/2023**
Official Use Only

10. *Distance from Septic System if ≤ 200 ft. ____ 11. Facility Description **Undefined - Reserved For Future Use** 12. Estimated Start Date **04/03/2023**

13. *Estimated Well Depth **50** ft. *Estimated Casing Depth **40** ft. *Primary Casing Diameter **1** in. Open Hole: From ____ To ____ ft.

14. Estimated Screen Interval: From **40** To **50** ft.

15. *Primary Casing Material: ____ Black Steel ____ Galvanized **X** PVC ____ Stainless Steel ____ Not Cased ____ Other: ____

16. Secondary Casing: ____ Telescope Casing ____ Liner ____ Surface Casing Diameter ____ in.

17. Secondary Casing Material: ____ Black Steel ____ Galvanized ____ PVC ____ Stainless Steel ____ Other ____

18. *Method of Construction, Repair, or Abandonment: ____ Auger ____ Cable Tool ____ Jetted ____ Rotary **X** Sonic ____ Combination (Two or More Methods) ____ Hand Driven (Well Point, Sand Point) ____ Hydraulic Point (Direct Push) ____ Horizontal Drilling ____ Plugged by Approved Method ____ Other (Describe) ____

19. Proposed Grouting Interval for the Primary, Secondary, and Additional Casing:

From **0**	To **40**	Seal Material (	____ Bentonite	____ Neat Cement	**X** Other	**Cement with Bentonite, < 5% by weight**)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)
From ____	To ____	Seal Material (	____ Bentonite	____ Neat Cement	____ Other	____)

20. Indicate total number of existing wells on site ____ List number of existing unused wells on site ____

21. *Is this well or any existing well or water withdrawal on the owner's contiguous property covered under a Consumptive/Water Use Permit (CUP/WUP) or CUP/WUP Application? ____ Yes **X** No If Yes, complete the following: CUP/WUP No. ____ District Well ID No. **541659**

22. Latitude **283054.77** Longitude **803929.54**

23. Data Obtained From: ____ GPS **X** Map ____ Survey Datum: ____ NAD 27 **X** NAD 83 ____ WGS 84

I hereby certify that I will comply with the applicable rules of Title 40, Florida Administration Code, and that a water use permit or artificial recharge permit, if needed, has been or will be obtained prior to commencement of well construction. I further certify that information provided in this application is accurate and that I will obtain necessary approval from other federal, state, or local governments, if applicable. I agree to provide a well completion report to the District within 30 days after completion of the construction, repair, modification, or abandonment authorized by this permit, or the permit expiration, whichever occurs first.

James P Hinst (*Signature of Contractor) | **9311** (*License No.)

I certify that I am the owner of the property, that the information provided is accurate, and that I am aware of my responsibilities under Chapter 373, Florida Statutes, to maintain or properly abandon this well; or, I certify that I am the agent for the owner, that the information provided is accurate, and that I have informed the owner of his responsibilities as stated above. Owner consents to allowing personnel of this WMD or Delegated Authority access to the well site during the construction, repair, modification, or abandonment authorized by this permit.

James P Hinst (*Signature of Owner or Agent) | **03/30/2023** (*Date)

BELOW THIS LINE – FOR OFFICIAL USE ONLY

Approval Granted By *Cynthia Leckey* Issue Date **03/30/2023** Expiration Date **03/29/2024** Hydrologist Approval ____ initials

Fee Received $ **100** Receipt No. **101014** Check No. **OnLine-09580J-816660**

THIS PERMIT IS NOT VALID UNTIL PROPERLY SIGNED BY AUTHORIZED OFFICER OR REPRESENTATIVE OF THE WMD OR DELEGATED AUTHORITY. THE PERMIT SHALL BE AVAILABLE AT THE WELL SITE DURING ALL CONSTRUCTION, MODIFICATION, OR ABANDONMENT ACTIVITIES.

WELL COMPLETION LOG

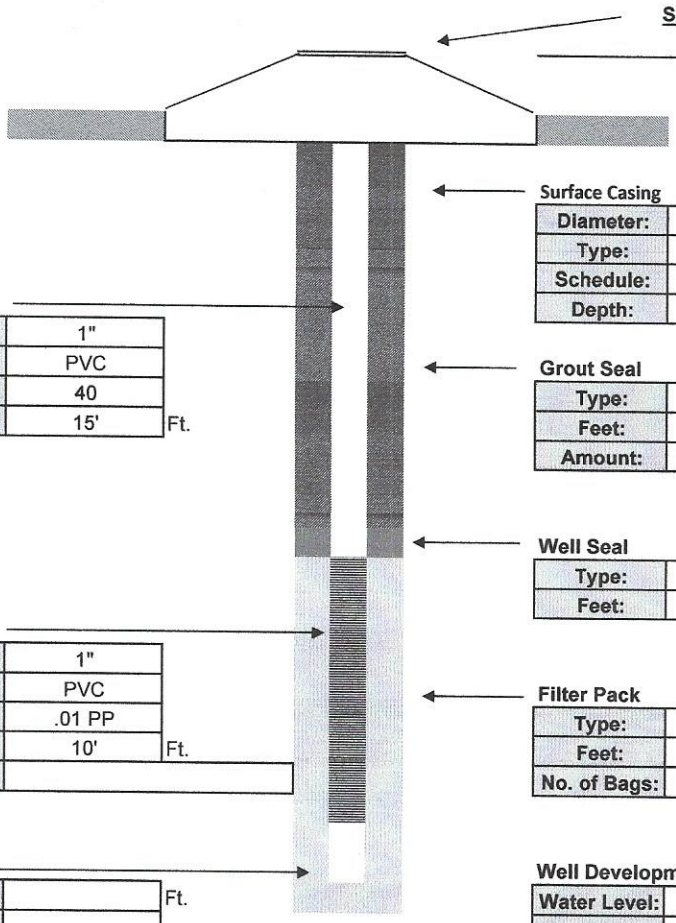
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0029
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	25'	10'	15'	1	1 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		11'	← Feet →	12'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	15' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	11'
Amount:	1 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	1 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824390

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 541659 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283054.77 Longitude 803929.54
9. Data Obtained From: ___GPS __X__Map ___Survey Datum: ___NAD 27 __X__NAD 83 ___WGS 84

10. *Type of Work: __X__Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
__X__Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted __X__Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above __X__Below Land Surface *Flowing: ___Yes __X__No
15. *Casing Material: ___Black Steel ___Galvanized __X__PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 25 ft. Cased Depth 15 ft. *Open Hole: From ___To___ft. *Screen: From 15 To 25 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
19. *Primary Casing Diameter and Depth:

Dia 1 in.	From 0 ft.	To 11 ft.	No. of Bags 1	Seal Material (Check One):	___Neat Cement	___Bentonite	__X__Other	Cement with Bentonite, < 5% by weight	
Dia 1 in.	From 11 ft.	To 15 ft.	No. of Bags 1.5	Seal Material (Check One):	___Neat Cement	___Bentonite	__X__Other	Sand	
Dia ___in.	From ___ft.	To ___ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___Other	___	
Dia ___in.	From ___ft.	To ___ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___Other	___	
Dia ___in.	From ___ft.	To ___ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___Other	___	

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___in. From ___ft. To ___ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower ___ Pump Capacity (GPM) ___
 Pump Depth ___ft. Intake Depth ___ft.
23. Chemical Analysis (When Required):
 Iron ___ppm Sulfate ___ppm Chloride ___ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	25 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample		
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			
From		To		Color		Grain Size (F, M, C)		Material			

Comments:
GP WO 423002
SW3 - MW 29

WELL COMPLETION LOG

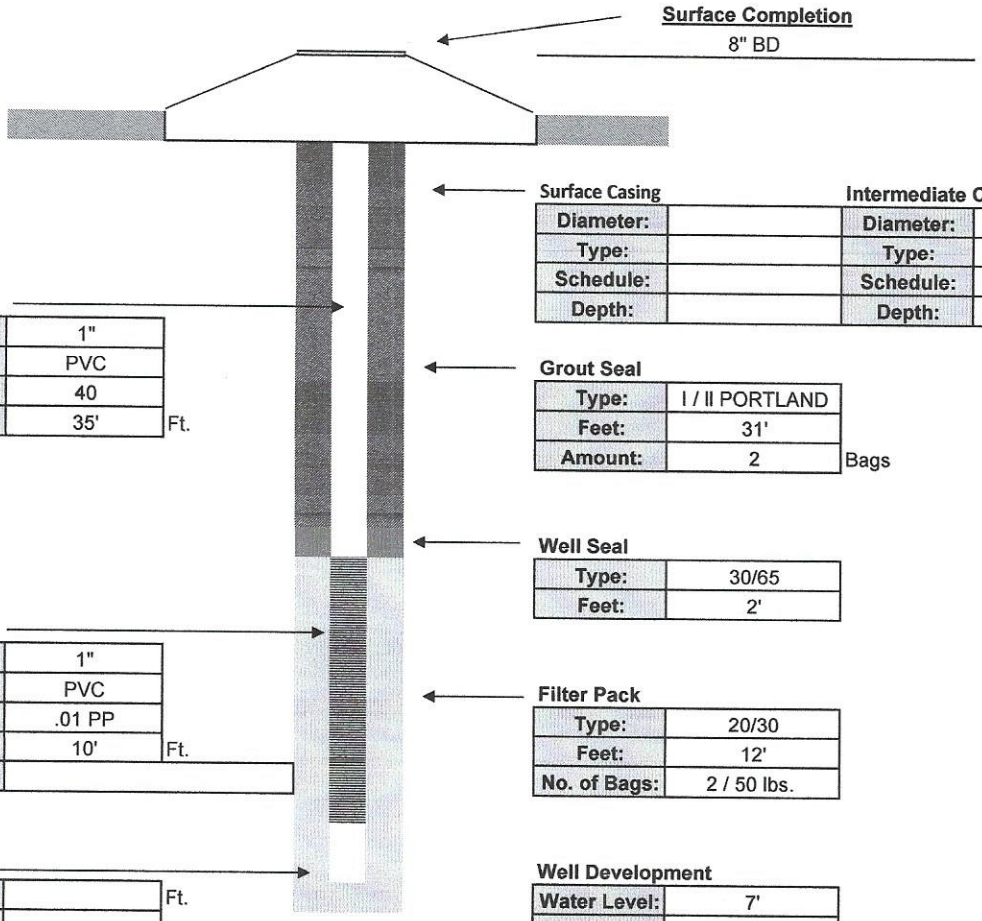
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0030
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	10'	35'	2	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		31'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	35' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	31'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824394

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543765 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283054.77 Longitude 803929.54
9. Data Obtained From: ___GPS _X_ Map ___Survey Datum: ___NAD 27 _X_ NAD 83 ___WGS 84

10. *Type of Work: _X_ Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
X Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted _X_ Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above _X_ Below Land Surface *Flowing: ___Yes _X_ No
15. *Casing Material: ___Black Steel ___Galvanized _X_ PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 45 ft. Cased Depth 35 ft. *Open Hole: From ___To___ft. *Screen: From 35 To 45 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
19. *Primary Casing Diameter and Depth:

Dia	1	in. From	0	ft. To	31	ft.	No. of Bags 2	Seal Material (Check One): ___Neat Cement ___Bentonite	_X_ Other Cement with Bentonite, < 5% by weight
Dia	1	in. From	31	ft. To	35	ft.	No. of Bags 1.5	Seal Material (Check One): ___Neat Cement ___Bentonite	_X_ Other Sand
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other_____
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other_____
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other_____

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other_____

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower _____ Pump Capacity (GPM) _____
 Pump Depth ___ft. Intake Depth ___ft.

23. Chemical Analysis (When Required):
 Iron ___ppm Sulfate ___ppm Chloride ___ppm
 ___Laboratory Test ___Field Test Kit

24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	45 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 30

WELL COMPLETION LOG

Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0031
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50'	5'	45'	2	1 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		41'	← Feet →	7'	2'

Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	45' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	41'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	1 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824400

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543770 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283054.77 Longitude 803929.54
9. Data Obtained From: ___GPS _X_ Map ___Survey Datum: ___NAD 27 _X_ NAD 83 ___WGS 84

10. *Type of Work: _X_ Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
X Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted _X_ Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above _X_ Below Land Surface *Flowing: ___Yes _X_ No
15. *Casing Material: ___Black Steel ___Galvanized _X_ PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 50 ft. Cased Depth 45 ft. *Open Hole: From ___To___ft. *Screen: From 45 To 50 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
19. *Primary Casing Diameter and Depth:

Dia 1 in.	From 0 ft.	To 41 ft.	No. of Bags 2	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other Cement with Bentonite, < 5% by weight
Dia 1 in.	From 41 ft.	To 45 ft.	No. of Bags 2	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other Sand
Dia ___in.	From ___ft.	To ___ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other___
Dia ___in.	From ___ft.	To ___ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other___
Dia ___in.	From ___ft.	To ___ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other___

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower ___ Pump Capacity (GPM) ___
 Pump Depth ___ft. Intake Depth ___ft.
23. Chemical Analysis (When Required):
 Iron ___ppm Sulfate ___ppm Chloride ___ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

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***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	50 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 31

WELL COMPLETION LOG

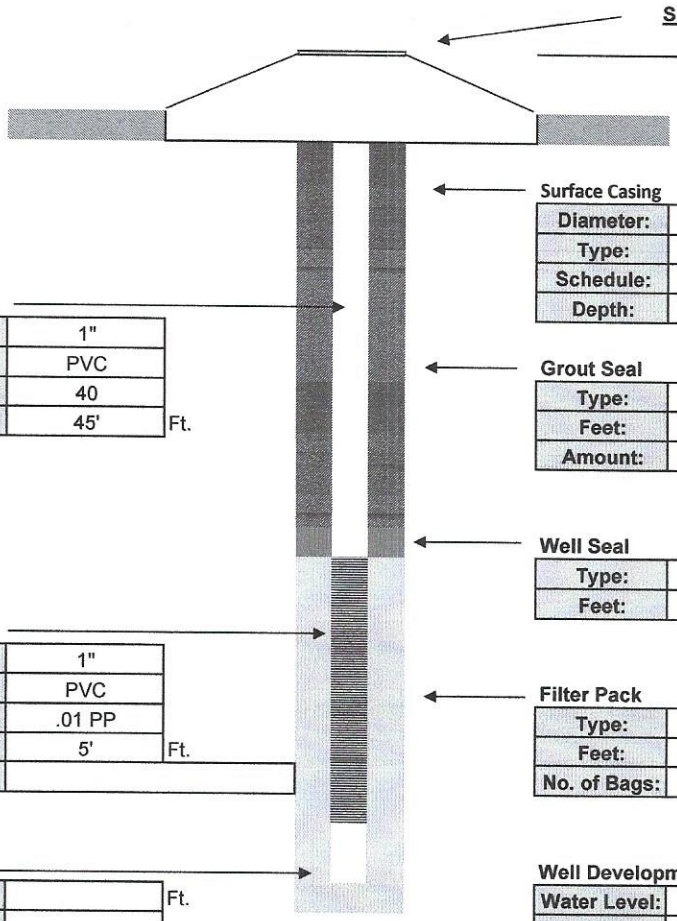
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0032
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50'	5'	45'	2	1 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		41'	← Feet →	7'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	45' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	41'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	1 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824403

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543772 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283051.5798 Longitude 803929.9939
9. Data Obtained From: ___GPS _X_ Map ___Survey Datum: ___NAD 27 ___NAD 83 _X_ WGS 84
10. *Type of Work: _X_ Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

- ___Domestic
- ___Bottled Water Supply
- ___Public Water Supply (Limited Use/DOH)
- ___Public Water Supply (Community or Non-Community/DEP)
- ___Class I Injection
- ___Landscape Irrigation
- ___Recreation Area Irrigation
- ___Agricultural Irrigation
- ___Livestock
- ___Nursery Irrigation
- ___Commercial/Industrial
- ___Golf Course Irrigation
- ___Site Investigation
- _X_ Monitoring
- ___Test
- ___Earth-Coupled Geothermal
- ___HVAC Supply
- ___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted _X_ Sonic ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above _X_ Below Land Surface *Flowing: ___Yes _X_ No
15. *Casing Material: ___Black Steel ___Galvanized _X_ PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 50 ft. Cased Depth 45 ft. *Open Hole: From ___ To ___ ft. *Screen: From 45 To 50 ft. Slot Size .01
17. *Abandonment: Other(Explain _____)
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
18. *Surface Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
19. *Primary Casing Diameter and Depth:
 Dia 1 in. From 0 ft. To 41 ft. No. of Bags 2 Seal Material (Check One): ___Neat Cement ___Bentonite _X_ Other Cement with Bentonite, < 5% by weight
 Dia 1 in. From 41 ft. To 45 ft. No. of Bags 2 Seal Material (Check One): ___Neat Cement ___Bentonite _X_ Other Sand
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
20. *Liner Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
21. *Telescope Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
22. Pump Type (If known): ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower ___ Pump Capacity (GPM) ___
 Pump Depth ___ ft. Intake Depth ___ ft.
23. Chemical Analysis (When Required): Iron ___ ppm Sulfate ___ ppm Chloride ___ ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

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***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	50 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 32

WELL COMPLETION LOG

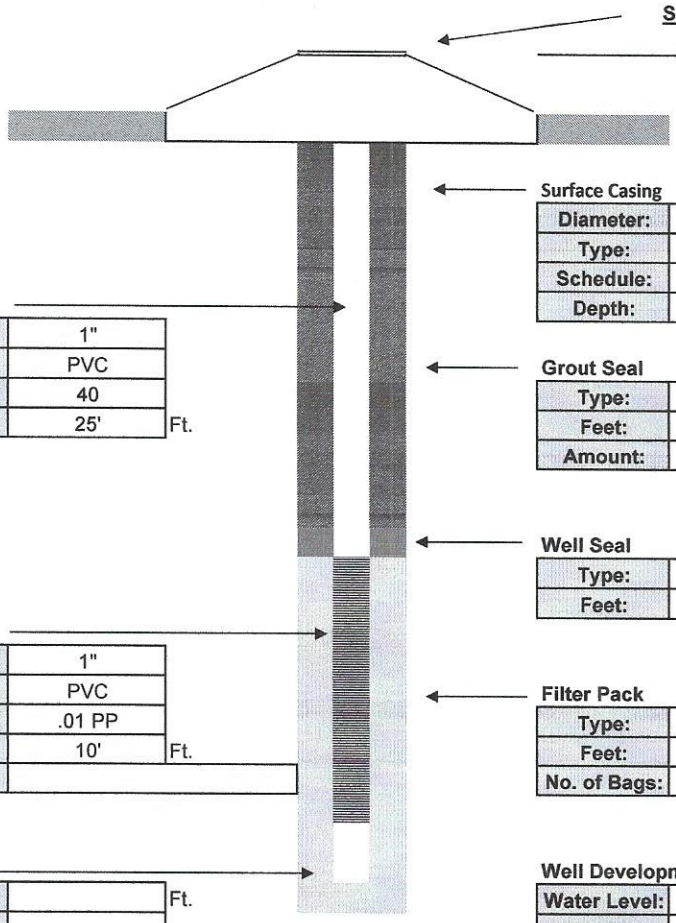
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0033
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	35'	10'	25'	2	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		21'	← Feet →	12'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	25' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	21'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

[] Southwest
[] Northwest
[] St. Johns River
[] South Florida
[] Suwannee River
[] DEP
[X] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

Date Stamp

Confirmation# 824406

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543773 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283051.8089 Longitude 803924.3934
9. Data Obtained From: ___GPS __X__Map ___Survey Datum: ___NAD 27 __X__NAD 83 ___WGS 84
10. *Type of Work: __X__Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
__X__Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted __X__Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above __X__Below Land Surface *Flowing: ___Yes __X__No
15. *Casing Material: ___Black Steel ___Galvanized __X__PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 35 ft. Cased Depth 25 ft. *Open Hole: From ___ To ___ ft. *Screen: From 25 To 35 ft. Slot Size .01
17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
19. *Primary Casing Diameter and Depth:

Dia 1 in.	From 0 ft.	To 21 ft.	No. of Bags 2	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other	Cement with Bentonite, < 5% by weight
Dia 1 in.	From 21 ft.	To 25 ft.	No. of Bags 1.5	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other	Sand
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite		Other	
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite		Other	
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags___	Seal Material (Check One):	___Neat Cement	___Bentonite		Other	

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower _____ Pump Capacity (GPM) _____
 Pump Depth ___ft. Intake Depth ___ft.
23. Chemical Analysis (When Required):
 Iron _____ppm Sulfate _____ppm Chloride _____ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	35 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 33

WELL COMPLETION LOG

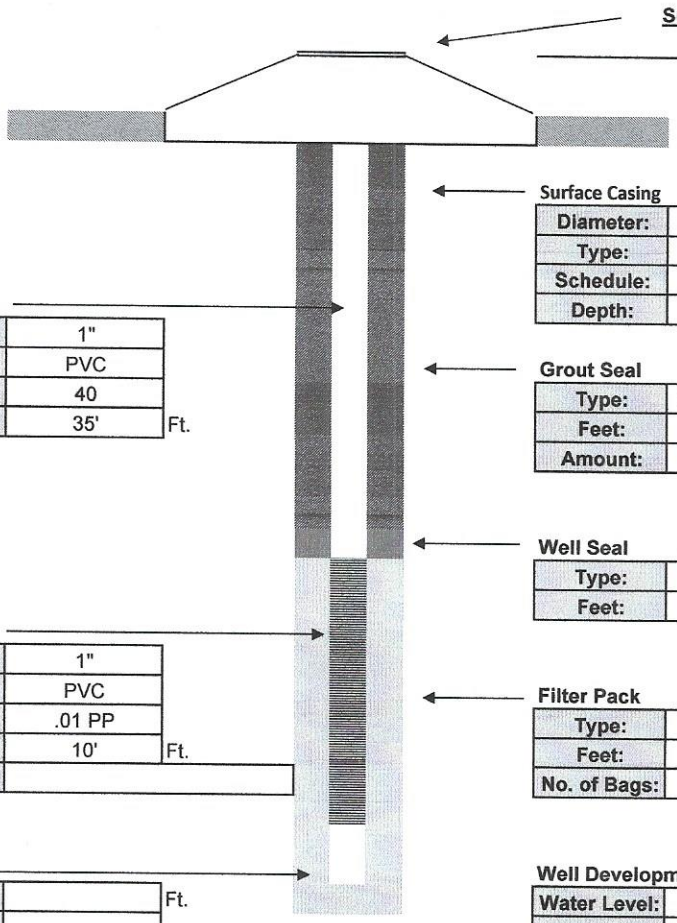
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0034
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	10'	35'	2	2 / 50 lbs.	20/30	30/65
40	Schedule	Slot Size:	.01 PP		31'	Feet	12'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	35' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	31'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824399

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543768 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283051.8513 Longitude 803924.4996
9. Data Obtained From: ___GPS _X_Map ___Survey Datum: ___NAD 27 _X_NAD 83 ___WGS 84

10. *Type of Work: _X_Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
_X_Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted _X_Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above _X_Below Land Surface *Flowing: ___Yes _X_No
15. *Casing Material: ___Black Steel ___Galvanized _X_PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 45 ft. Cased Depth 35 ft. *Open Hole: From ___To___ft. *Screen: From 35 To 45 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
19. *Primary Casing Diameter and Depth:

Dia	1	in. From	0	ft. To	31	ft.	No. of Bags 2	Seal Material (Check One): ___Neat Cement ___Bentonite	_X_Other Cement with Bentonite, < 5% by weight
Dia	1	in. From	31	ft. To	35	ft.	No. of Bags 1.5	Seal Material (Check One): ___Neat Cement ___Bentonite	_X_Other Sand
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other___
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other___
Dia	___	in. From	___	ft. To	___	ft.	No. of Bags___	Seal Material (Check One): ___Neat Cement ___Bentonite	___Other___

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower _____ Pump Capacity (GPM) _____
 Pump Depth ___ft. Intake Depth ___ft.
23. Chemical Analysis (When Required):
 Iron ___ppm Sulfate ___ppm Chloride ___ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	45 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 34

WELL COMPLETION LOG

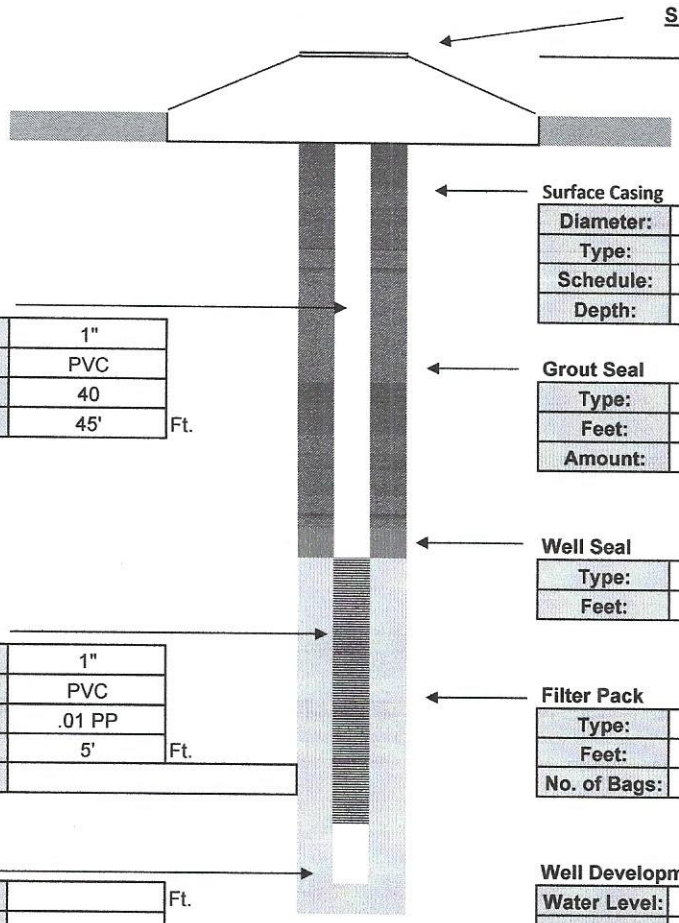
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: SW3 MW 0035
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	50'	5'	45'	2	1 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		41'	← Feet →	7'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	45' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	41'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	5' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	7'
No. of Bags:	1 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	7'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

[] Southwest
[] Northwest
[] St. Johns River
[] South Florida
[] Suwannee River
[] DEP
[X] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

Date Stamp

Confirmation# 824401

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543771 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283051.8089 Longitude 803924.3934
9. Data Obtained From: ___GPS __X__Map ___Survey Datum: ___NAD 27 __X__NAD 83 ___WGS 84

10. *Type of Work: __X__Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
__X__Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted __X__Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above __X__Below Land Surface *Flowing: ___Yes __X__No
15. *Casing Material: ___Black Steel ___Galvanized __X__PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 50 ft. Cased Depth 45 ft. *Open Hole: From ___To___ft. *Screen: From 45 To 50 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
18. *Surface Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
19. *Primary Casing Diameter and Depth:

Dia	1 in.	From	0 ft.	To	41 ft.	No. of Bags 2	Seal Material (Check One):	Neat Cement	Bentonite X Other Cement with Bentonite, < 5% by weight
Dia	1 in.	From	41 ft.	To	45 ft.	No. of Bags 2	Seal Material (Check One):	Neat Cement	Bentonite X Other Sand
Dia	___in.	From	___ft.	To	___ft.	No. of Bags___	Seal Material (Check One):	Neat Cement	Bentonite Other___
Dia	___in.	From	___ft.	To	___ft.	No. of Bags___	Seal Material (Check One):	Neat Cement	Bentonite Other___
Dia	___in.	From	___ft.	To	___ft.	No. of Bags___	Seal Material (Check One):	Neat Cement	Bentonite Other___

20. *Liner Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
21. *Telescope Casing Diameter and Depth:
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___
 Dia ___in. From ___ft. To ___ft. No. of Bags___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other___

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower ___ Pump Capacity (GPM) ___
 Pump Depth ___ft. Intake Depth ___ft.
23. Chemical Analysis (When Required):
 Iron ___ppm Sulfate ___ppm Chloride ___ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.)
 *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	50 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	
From	____ ft.	To	____ ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
SW3 - MW 35

WELL COMPLETION LOG

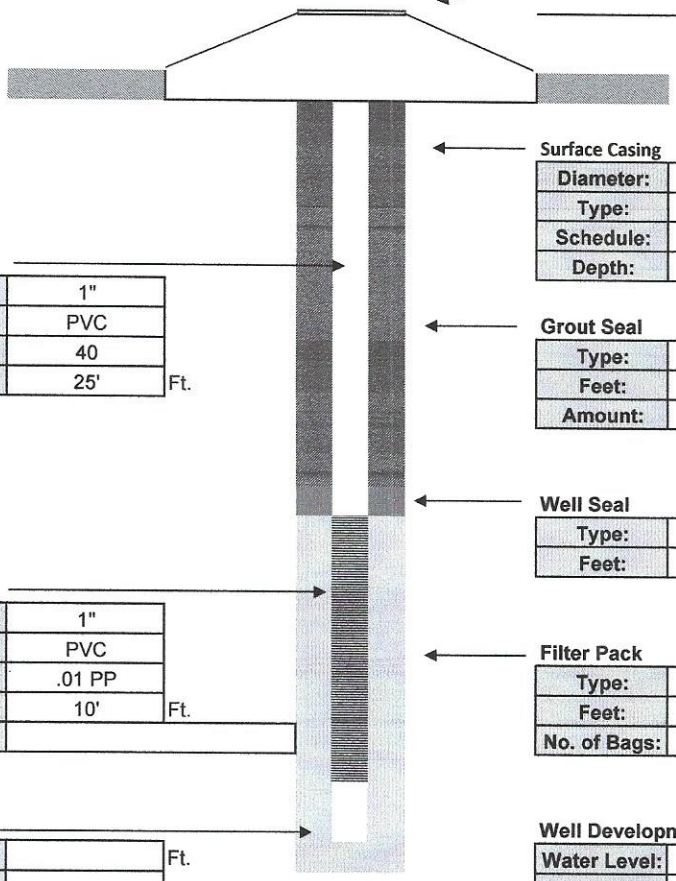
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: POL MW 0048I
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	35'	10'	25'	2	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		21'	← Feet →	12'	2'



Surface Completion
8" BD

Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	25' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	21'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	6'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

[] Southwest
[] Northwest
[] St. Johns River
[] South Florida
[] Suwannee River
[] DEP
[X] Delegated Authority (If Applicable) **Brevard DOH**

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

Date Stamp

Confirmation# 824408

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543774 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283051.8174 Longitude 803917.0452
9. Data Obtained From: ___GPS ___X___Map ___Survey Datum: ___NAD 27 ___X___NAD 83 ___WGS 84

10. *Type of Work: ___X___Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
___X___Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted ___X___Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above ___X___Below Land Surface *Flowing: ___Yes ___X___No
15. *Casing Material: ___Black Steel ___Galvanized ___X___PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 35 ft. Cased Depth 25 ft. *Open Hole: From ___ To ___ ft. *Screen: From 25 To 35 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
18. *Surface Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
19. *Primary Casing Diameter and Depth:

Dia 1 in.	From 0 ft.	To 21 ft.	No. of Bags 2	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other Cement with Bentonite, < 5% by weight
Dia 1 in.	From 21 ft.	To 25 ft.	No. of Bags 1.5	Seal Material (Check One):	___Neat Cement	___Bentonite	X	Other Sand
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___

20. *Liner Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
21. *Telescope Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other _____

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower _____ Pump Capacity (GPM) _____
 Pump Depth ___ ft. Intake Depth ___ ft.
23. Chemical Analysis (When Required):
 Iron _____ppm Sulfate _____ppm Chloride _____ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.)
 *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0	ft.	To	35	ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	
From		ft.	To		ft.	Color		Grain Size (F, M, C)		Material	

Comments:
GP WO 423002
POL - 48I

WELL COMPLETION LOG

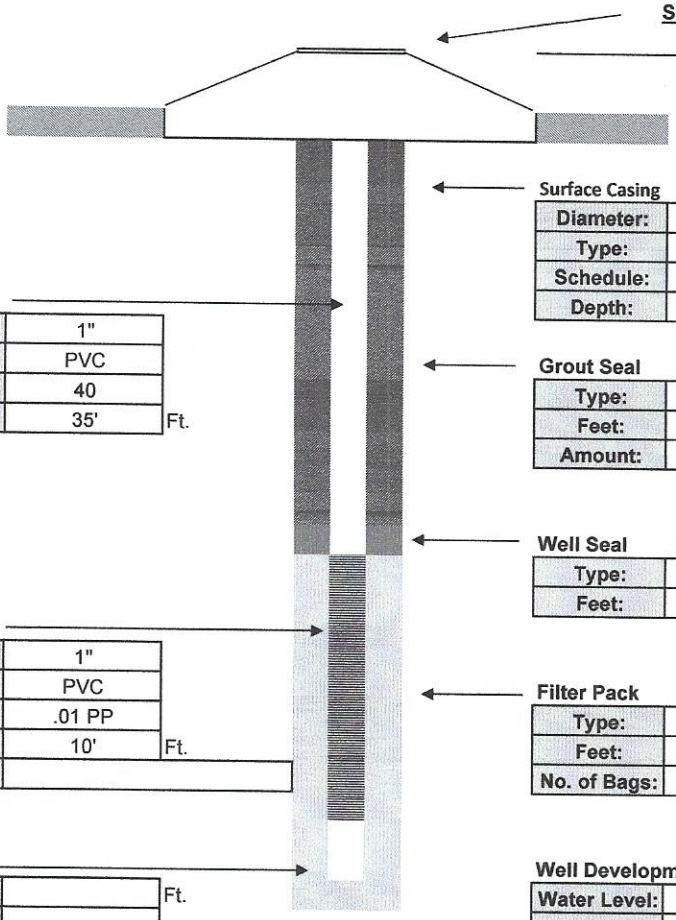
Water Mgmt. Dist.:
Permit Number:

Work Order: 423003
Type of Well: Monitor
Well Number: POL MW 0048D
Method Used: Sonic
Borehole Diaz. 4"

Site Information:
Name: POL & STP - 1
Address: KSC
C,S,Z: FL
S/T/R:

Client / Consultant Information
Consultant: Tetra Tech
Field Rep: Chuck Sorden

Well Diameter	Well Type	Well Depth	Screen Length	Casing Length	Bags Grout	Sand Bags/Weight	Filter Type	Well Seal
1"	PVC	45'	10'	35'	2	2 / 50 lbs.	20/30	30/65
40 ←	Schedule	Slot Size: →	.01 PP		31'	← Feet →	12'	2'



Surface Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Intermediate Casing

Diameter:	
Type:	
Schedule:	
Depth:	

Well Casing

Diameter:	1"
Type:	PVC
Schedule:	40
Length:	35' Ft.

Grout Seal

Type:	I / II PORTLAND
Feet:	31'
Amount:	2 Bags

Well Seal

Type:	30/65
Feet:	2'

Well Screen

Diameter:	1"
Type:	PVC
Slot:	.01 PP
Length:	10' Ft.
Note:	

Filter Pack

Type:	20/30
Feet:	12'
No. of Bags:	2 / 50 lbs.

Sump

Length:	Ft.
Type:	

Well Development

Water Level:	6'		
Method:	Honda		
Start:	Cloudy	Finish:	Clear
Time:	.5 Hr		
GPM:	1		

Contractor Information

Contractor #:	9311
Completion:	4/20/2023
Driller:	David Longino
Lead Hand:	Christian Dodd
3rd Man:	Jeff Zeigler
Drill Rig:	SR 7

Company:	Drillpro LLC d/b/a Groundwater Protection
Address:	2300 Silver Star Road
C,S,Z:	Orlando, Florida 32804-3310
Phone/FAX:	(407) 426-7885 / (407) 426-7586

STATE OF FLORIDA WELL COMPLETION REPORT

PLEASE, FILL OUT ALL APPLICABLE FIELDS
(*Denotes Required Fields Where Applicable)

- [] Southwest
- [] Northwest
- [] St. Johns River
- [] South Florida
- [] Suwannee River
- [] DEP
- [x] Delegated Authority (If Applicable) **Brevard DOH**

Date Stamp

Confirmation# 824397

Date:05/10/2023

Official Use Only

1. *Permit Number MW-200271-1 *CUP/WUP Number _____ *DID Number 543767 62-524 Delineation No. _____
2. *Number of permitted wells constructed, repaired, or abandoned 9 *Number of permitted wells not constructed, repaired, or abandoned 0
3. *Owner's Name United States Of America 4.*Completion Date 04/20/2023 5. Florida Unique ID _____
6. Area south of 5th St SE & B Ave SE, KSC, FL 32953
 *Well Location – Address, Road Name or Number, City, ZIP
7. *County Brevard *Section 5 Land Grant _____ *Township 23S *Range 37E
8. Latitude 283052.021 Longitude 803918.1074
9. Data Obtained From: ___GPS __X__Map ___Survey Datum: ___NAD 27 __X__NAD 83 ___WGS 84

10. *Type of Work: __X__Construction ___Repair ___Modification ___Abandonment Reason: _____
11. *Specify Intended Use(s) of Well(s):

___Domestic
___Bottled Water Supply
___Public Water Supply (Limited Use/DOH)
___Public Water Supply (Community or Non-Community/DEP)
___Class I Injection
___Landscape Irrigation
___Recreation Area Irrigation
___Agricultural Irrigation
___Livestock
___Nursery Irrigation
___Commercial/Industrial
___Golf Course Irrigation
___Site Investigation
__X__Monitoring
___Test
___Earth-Coupled Geothermal
___HVAC Supply
___HVAC Return

Class V Injection: ___Recharge ___Commercial/Industrial Disposal ___Aquifer Storage and Recovery ___Drainage
Remediation: ___Recovery ___Air Sparge ___Other (Describe) _____
___Other (Describe) _____

12. *Drill Method: ___Auger ___Cable Tool ___Rotary ___Combination (Two or More Methods) ___Jetted __X__Sonic
 ___Horizontal Drilling ___Hydraulic Point (Direct Push) ___Other _____
13. *Measured Static Water Level 7 ft. Measured Pumping Water Level 7 ft. After 1 Hours at 1 GPM
14. *Measuring Point (Describe) ground surface Which is .4 ft. ___Above __X__Below Land Surface *Flowing: ___Yes __X__No
15. *Casing Material: ___Black Steel ___Galvanized __X__PVC ___Stainless Steel ___Not Cased ___Other _____
16. *Total Well Depth 45 ft. Cased Depth 35 ft. *Open Hole: From ___ To ___ ft. *Screen: From 35 To 45 ft. Slot Size .01

17. *Abandonment: Other(Explain _____)
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
18. *Surface Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
19. *Primary Casing Diameter and Depth:

Dia 1 in.	From 0 ft.	To 31 ft.	No. of Bags 2	Seal Material (Check One):	___Neat Cement	___Bentonite	__X__	Other Cement with Bentonite, < 5% by weight	
Dia 1 in.	From 31 ft.	To 35 ft.	No. of Bags 1.5	Seal Material (Check One):	___Neat Cement	___Bentonite	__X__	Other Sand	
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___	
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___	
Dia ___ in.	From ___ ft.	To ___ ft.	No. of Bags ___	Seal Material (Check One):	___Neat Cement	___Bentonite	___	Other ___	

20. *Liner Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
21. *Telescope Casing Diameter and Depth:
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___
 Dia ___ in. From ___ ft. To ___ ft. No. of Bags ___ Seal Material (Check One): ___Neat Cement ___Bentonite ___Other ___

22. Pump Type (If known):
 ___Centrifugal ___Jet ___Submersible ___Turbine
 Horsepower _____ Pump Capacity (GPM) _____
 Pump Depth ___ ft. Intake Depth ___ ft.
23. Chemical Analysis (When Required):
 Iron _____ppm Sulfate _____ppm Chloride _____ppm
 ___Laboratory Test ___Field Test Kit
24. Water Well Contractor:
 *Contractor Name James P Hinst *License Number 9311 E-mail Address jim@drillprollc.com
 *Contractor's Signature **James P Hinst** (I certify that the information provided in this report is accurate and true.) *Driller's Name (Print or Type) David Longino

*Permit No. MW-200271-1

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
2379 BROAD STREET, BROOKSVILLE, FL 34604-6899
PHONE: (352) 796-7211 or (800) 423-1476
WWW.SWFWMD.STATE.FL.US

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
4049 REID STREET, PALATKA, FL 32178-1429
PHONE: (386) 329-4500
WWW.SJRWMD.COM

NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
152 WATER MANAGEMENT DR., HAVANA, FL 32333-4712
(U.S. Highway 90, 10 miles west of Tallahassee)
PHONE: (850) 539-5999
WWW.NWFWMD.STATE.FL.US

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
P.O. BOX 24680
3301 GUN CLUB ROAD
WEST PLAM BEACH, FL 33416-4680
PHONE: (561) 686-8800
WWW.SFWMD.GOV

SUWANNEE RIVER WATER MANAGEMENT DISTRICT
9225 CR 49
LIVE OAK, FL 32060
PHONE: (386) 362-1001 or (800) 226-1066 (Florida only)
WWW.MYSUWANNEERIVER.COM

***DRILL CUTTINGS LOG** (Examine cuttings every 20 ft. or at formation changes. Note cavities and depth to producing zone. Grain Size: F=Fine, M=Medium, and C=Coarse)

From	0 ft.	To	45 ft.	Color	N/A	Grain Size (F, M, C)	N/A	Material	No Sample		
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			
From	ft.	To	ft.	Color		Grain Size (F, M, C)		Material			

Comments:
GP WO 423002
POL - MW 48D

KUGELMANN LAND SURVEYING, INC 5/16/2023
30 N TROPICAL TRL, STE B, MERRITT ISLAND, FL 32953
klsinc@cfl.rr.com KLS# 2023012 LB 6575

TETRA TECH (IN FEET)
KENNEDY SPACE CENTER: FSA # 1, FSA # 3, SEWER TREATMENT PLANT #1, & POL

POINT #	NORTHING	EASTING	TOC EL	GND EL	DESC	ID
15	1521966.75	767475.67	6.13	6.3	MW	FS1-MW0001
16	1521962.20	767475.43	6.00	6.3	MW	FS1-MW0002
20	1521816.00	767476.70	6.47	6.6	MW	FS1-MW0003
21	1521810.59	767476.20	6.35	6.6	MW	FS1-MW0004
25	1521438.42	767477.29	6.27	6.5	MW	FS1-MW0005
26	1521433.86	767477.32	6.26	6.5	MW	FS1-MW0006
1	1556207.98	777670.50	4.87	5.3	MW	FS3-MW0001
2	1556208.16	777673.84	5.01	5.3	MW	FS3-MW0002
4	1556130.91	778328.96	3.46	1.1	MW	FS3-MW0003
5	1556133.66	778324.39	3.63	1.1	MW	FS3-MW0004
7	1555658.95	778184.78	6.49	7.0	MW	FS3-MW0005
8	1555662.82	778184.54	6.92	7.0	MW	FS3-MW0006
28	1521064.73	766893.35	6.16	6.5	MW	STP1-MW0001
29	1521064.88	766897.71	6.38	6.5	MW	STP1-MW0002
32	1520590.59	767424.92	6.52	6.9	MW	STP1-MW0003
33	1520594.26	767421.65	6.90	6.9	MW	STP1-MW0004
36	1520483.63	769080.94	5.19	5.7	MW	STP1-MW0005
37	1520485.16	769078.07	5.53	5.7	MW	STP1-MW0006
40	1519890.73	766157.10	8.71	8.8	MW	STP1-MW0007
41	1519891.16	766152.67	8.68	8.8	MW	STP1-MW0008
44	1519884.73	766725.72	8.34	8.4	MW	STP1-MW0009
45	1519884.78	766721.41	8.34	8.4	MW	STP1-MW0010
48	1519880.56	767148.26	7.97	8.1	MW	STP1-MW0011
49	1519880.46	767143.95	8.07	8.1	MW	STP1-MW0012
52	1519887.28	768735.59	5.15	5.4	MW	STP1-MW0013
53	1519886.72	768739.86	5.30	5.4	MW	STP1-MW0014
56	1518150.16	769060.10	5.46	5.6	MW	STP1-MW0015
57	1518145.83	769059.81	5.27	5.6	MW	STP1-MW0016
59	1517693.84	769053.69	4.98	5.3	MW	STP1-MW0017
60	1517689.60	769053.36	4.96	5.3	MW	STP1-MW0018
63	1517349.75	769923.64	4.66	4.8	MW	STP1-MW0019
64	1517349.80	769927.74	4.56	4.8	MW	STP1-MW0020
66	1517641.54	770553.27	4.05	4.3	MW	STP1-MW0021
67	1517644.21	770555.98	4.42	4.3	MW	STP1-MW0022
68	1517986.45	769900.63	4.65	5.1	MW	STP1-MW0024
69	1517986.97	769896.96	4.83	5.1	MW	STP1-MW0023
73	1520197.02	765899.88	8.68	9.0	MW	SW3-MW00029
74	1520191.36	765900.67	8.83	9.0	MW	SW3-MW00030
75	1520185.24	765900.98	8.91	9.0	MW	SW3-MW00031

76	1519865.41	765907.35	8.05	8.2	MW	SW3-MW00032
81	1519886.48	766357.93	7.37	7.5	MW	SW3-MW00033
82	1519886.52	766353.97	7.39	7.5	MW	SW3-MW00034
83	1519886.79	766350.05	7.57	7.5	MW	SW3-MW00035
78	1519869.69	766910.14	8.39	8.4	MW	POL-MW00048I
79	1519870.22	766906.58	8.34	8.4	MW	POL-MW00048D

(IN FEET)

POINT #	NORTHING	EASTING	TOP OF PVC EL	DESC	ID
27	1521047.40	766893.26		STAFF GAUGE	SG STP1-001
			8.70	STILLING WELL	ADJACENT TO STP1-001
34	1520565.44	767412.59		STAFF GAUGE	STP1-002
			7.96	STILLING WELL	ADJACENT TO STP1-002
38	1520490.01	769111.67		STAFF GAUGE	SG STP1-003
			4.48	STILLING WELL	ADJACENT TO STP1-003
42	1519932.28	766130.57		STAFF GAUGE	SG STP1-004
			4.77	STILLING WELL	ADJACENT TO STP1-004
46	1519930.24	766738.23		STAFF GAUGE	SG STP1-005
			4.27'	STILLING WELL	ADJACENT TO STP1-005
50	1519930.76	767147.40		STAFF GAUGE	SG STP1-006
			4.62	STILLING WELL	ADJACENT TO STP1-006
54	1519915.70	768746.74		STAFF GAUGE	SG STP1-007
			4.14'	STILLING WELL	ADJACENT TO STP1-007
58	1518136.94	769091.41		STAFF GAUGE	SG STP1-008
			4.10	STILLING WELL	ADJACENT TO STP1-008
71	1517632.29	770537.25		STAFF GAUGE	SG STP1-011
			PREVIOUSLY SET	STILLING WELL	ADJACENT TO STP1-011
18	1521967.60	767458.95		STAFF GAUGE	SG FS1-001
			9.02	STILLING WELL	ADJACENT TO FS1-001
22	1521803.34	767456.70		STAFF GAUGE	SG FS1-002
			8.20	STILLING WELL	ADJACENT TO FS1-002
23	1521440.75	767456.80		STAFF GAUGE	SG FS1-003
			8.14	STILLING WELL	ADJACENT TO FS1-003
13	1556066.47	777430.30		STAFF GAUGE	SG FS3-001
			4.59	STILLING WELL	ADJACENT TO FS3-001
11	1556130.02	778353.07		STAFF GAUGE	SG FS3-002
			5.14	STILLING WELL	ADJACENT TO FS3-002
10	1555633.87	778166.99		STAFF GAUGE	SG FS3-003
			6.35	STILLING WELL	ADJACENT TO FS3-003

SURVEYOR'S NOTES:

1. THE PURPOSE OF THIS SURVEY IS TO DETERMINE THE HORIZONTAL AND VERTICAL POSITION OF GROUNDWATER MONITORING WELLS AND STAFF GAUGES.
2. THE COORDINATES DEPICTED HEREON ARE REFERENCED TO THE FLORIDA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NORTH AMERICAN DATUM OF 1983 (NAD83), 2011

ADJUSTMENT AND ARE BASED ON THE NATIONAL GEODETIC SURVEY MONUMENT 'APOLLO' & 'NITRO' HAVING PUBLISHED COORDINATES OF NORTHING 1523464.75 AND EASTING 769124.56 AND NORTHING 1551711.25 AND EASTING 771583.25, RESPECTIVELY.

3. ELEVATIONS DEPICTED HEREON ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988) AND ARE BASED ON UNITED STATES COAST AND GEODETIC SURVEY MONUMENTS 'APOLLO' & 'E 216' HAVING PUBLISHED ELEVATIONS OF 9.36 FEET AND 5.77 FEET, RESPECTIVELY.
4. THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE CLIENT(S) SHOWN HEREON AND COPIES ARE VALID ONLY WITH THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED PROFESSIONAL SURVEYOR & MAPPER UNLESS ELECTRONICALLY SIGNED AND SEALED IN ACCORDANCE WITH FLORIDA STATUTES CHAPTER 472.025 AND THE STANDARDS OF PRACTICE FOR SURVEYS AS REFERENCED BY CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODES.

ABBREVIATIONS:

TOC =	TOP OF CASING	DESC =	DESCRIPTION
EL =	ELEVATION	ID =	IDENTIFICATION
GND =	GROUND	MW =	MONITORING WELL



DAVID J. KUGELMANN, P.L.S. NO. 5117

APPENDIX F

OCTOBER 2023 ADP AND KSCRT MEETING MINUTES

Revision 1 Meeting Minutes for February 7th and 8th, 2023

Attendees:

1. Evan Miller/FDEP
2. Jason French/FDEP
3. Ryan O'Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Natasha Darre/NASA
7. Chris Adkison/NASA
8. Michelle Moore/NEMCON
9. Mark Jonnet/Tetra Tech
10. Alex Murphy/Tetra Tech
11. Mark Speranza/Tetra Tech
12. Sarah Damphousse/Tetra Tech
13. Chris Neumann/Tetra Tech
14. Andrew Walters/Tetra Tech
15. Debbie Wilson/Tetra Tech
16. Chris Hook/Tetra Tech
17. Chris Pike/Tetra Tech
18. Jennifer Gootee/AECOM
19. Linnea King Clark/AECOM
20. Megan Garcia/AECOM
21. James Montague/AECOM
22. Randy Sillan/AECOM
23. Richard Smith/HGL
24. Jay Santa/HGL
25. Robert Lynch/HGL

2302-M01 Anne Chrest/NASA

NASA Remediation Program Update

National Aeronautics and Space Administration (NASA) summarized the look-ahead documents provided to the Kennedy Space Center (KSC) Remediation Team (KSCRT) on February 5, 2023, briefly touched on the highlights of the documents, and provided an opportunity to seek clarification by team members. Highlights included team consensus, social norms, conflict resolution, and the preference of the Florida Department of Environmental Protection (FDEP) to receive report deliverables.

FDEP agreed that reports submitted to them can move solely to electronic submittals.

NASA stated that they would be shifting their administrative record to electronic format as well moving forward. The only exception may be for the submittal by Architectural and Engineering (A&E) firms of Interim Measure Work Plans (IMWP). NASA would prefer to receive IMWPs in hard copy and electronic form, and this direction will be refined with the update of this document and a resubmission of a final.

2302-M02 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Objective: To review the Kennedy Space Center (KSC) Remediation Team (KSCRT) open action items. Team consensus on October 2022 meeting minutes was obtain on December 23, 2022.

Discussion:

Open action items were reviewed and the following were closed out:

SWMU 067 Paint and Oil Locker and SWMU #088 Supply Warehouse 3 Advance Data Package: Tetra Tech will create a figure of the proposed monitoring well locations and give to NASA. A figure was created and provided to FDEP. This action item will be closed out **(2210-A12).**

TETRA TECH

SWMU 067 Paint and Oil Locker (POL) Southern Treatment Area Year 2 Performance Monitoring; and SWMU 067 POL Northern Area and Solid Waste Management Unit (SWMU) 088 – Supply Warehouse #3 (SW3) Long-Term Monitoring Program

Advance Data Package

October 2023



This Advance Data Package (ADP) was prepared for NASA to aid in evaluation of site conditions and remedial actions. This is not a decision document. New information may come to light that makes this ADP outdated.

complex world | CLEAR SOLUTIONS™

Presentation Objectives

TETRA TECH

The goal of this ADP is to present:

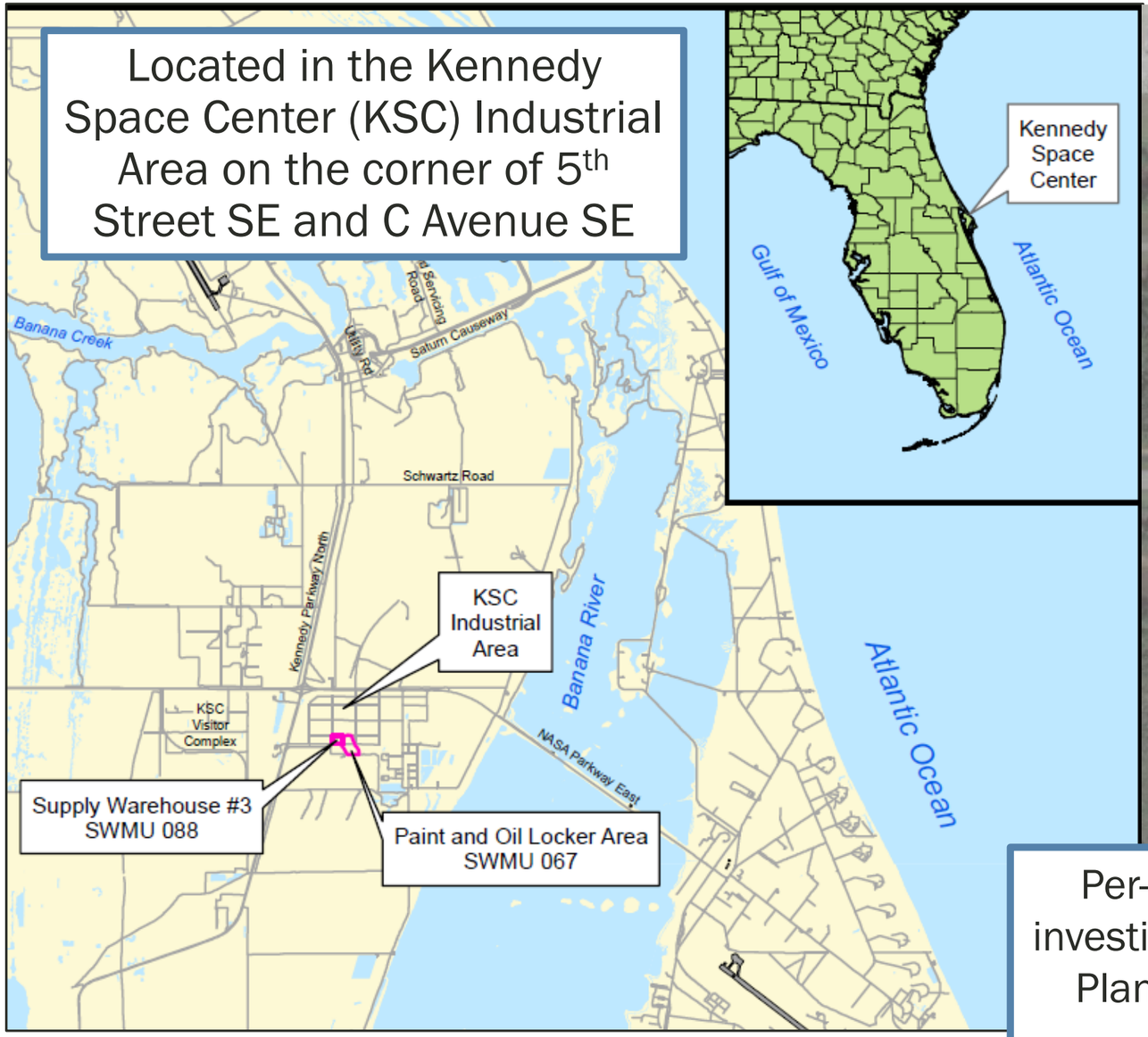
POL Southern Treatment Area Year 2 Performance Monitoring (PM)

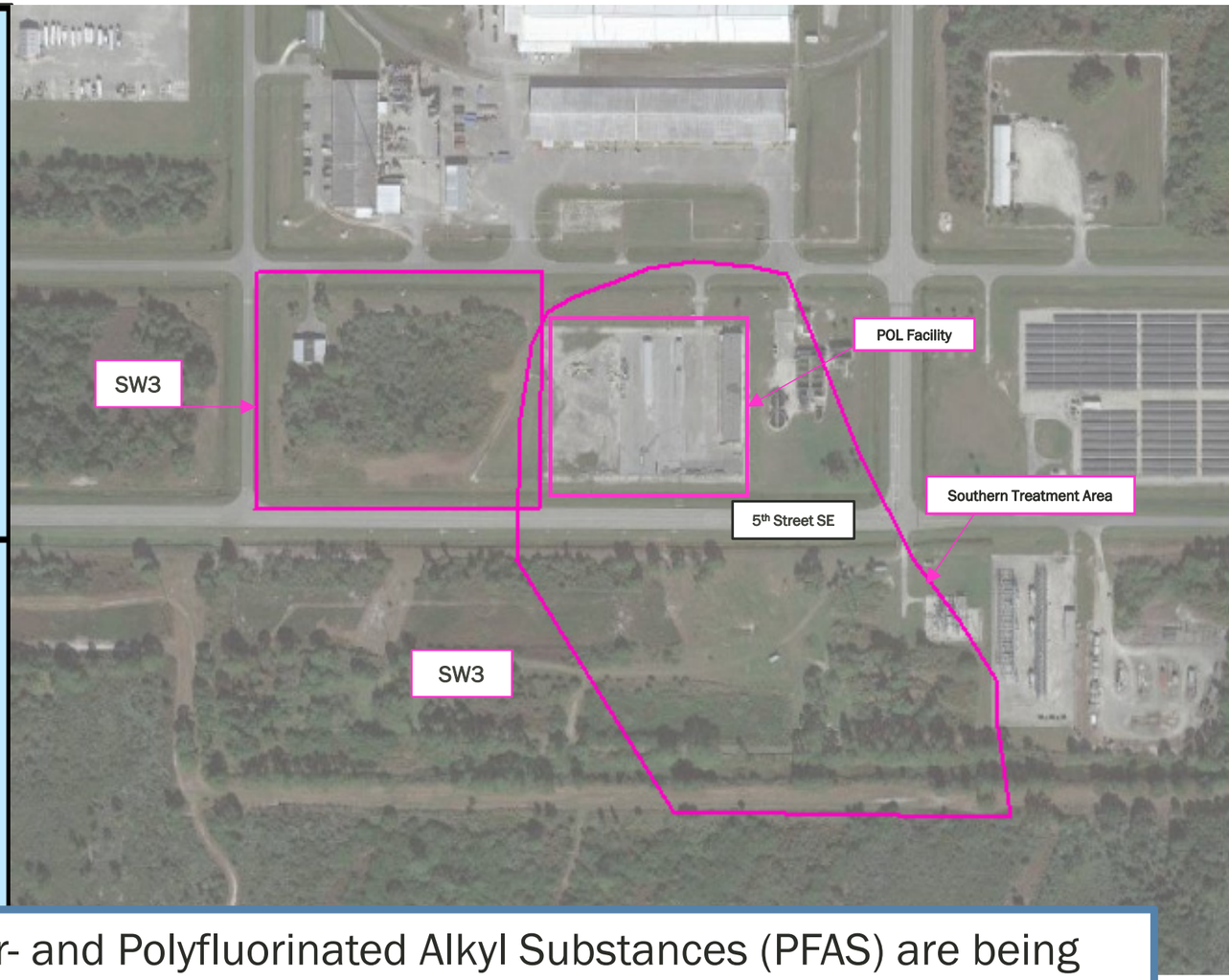
- Site history, background, and conditions
- Baseline (April 2020) and Year 2 performance groundwater monitoring results
- Year 2 system operation
- Annual and semi-annual synoptic groundwater survey results
- Data Evaluation and Conclusions
- Path Forward
- Team Consensus

POL Northern Area and SW3 Long-Term Monitoring (LTM) Program

- SW3 LTM groundwater sampling and Air Sparging (AS) system history
- POL Northern Area LTM groundwater sampling and AS system history
- SW3 and POL Northern Area LTM monitoring well installation, groundwater monitoring plan, and sampling rationale
- SW3 and POL Northern Area LTM groundwater sampling results
- LTM Data Evaluation and Conclusions
- Team Consensus

POL Southern Treatment Area, POL Northern Area, and SW3 Site Locations





Per- and Polyfluorinated Alkyl Substances (PFAS) are being investigated in this vicinity under SWMU 117 Sewage Treatment Plant 1 and Sludge Disposal Area. SWMU 117 overlays the POL/SW3 area.

POL Site Use and History

- Constructed between 1965 and 1972
- Supported space flight efforts at KSC
- POL Facility includes:
 - **Drum Storage Area**
 - Staging area for 55-gallon drum pallets and drums
 - **7-Acre Storage area**
 - Storage of construction materials such as wood, metal, and plastic
 - **Gas Cylinder Storage Structure**
 - Storage of gas cylinders
 - **Covered Storage Structure (no longer exists)**
 - Storage of acids, corrosives, oils, alcohols
 - **POL Building (M6-894)**
 - Storage of solvents, adhesives, photographic and printing chemicals, detergents, insecticides, greases, oils, lubricants, and waxes



Orientation: South of the POL facility facing north.

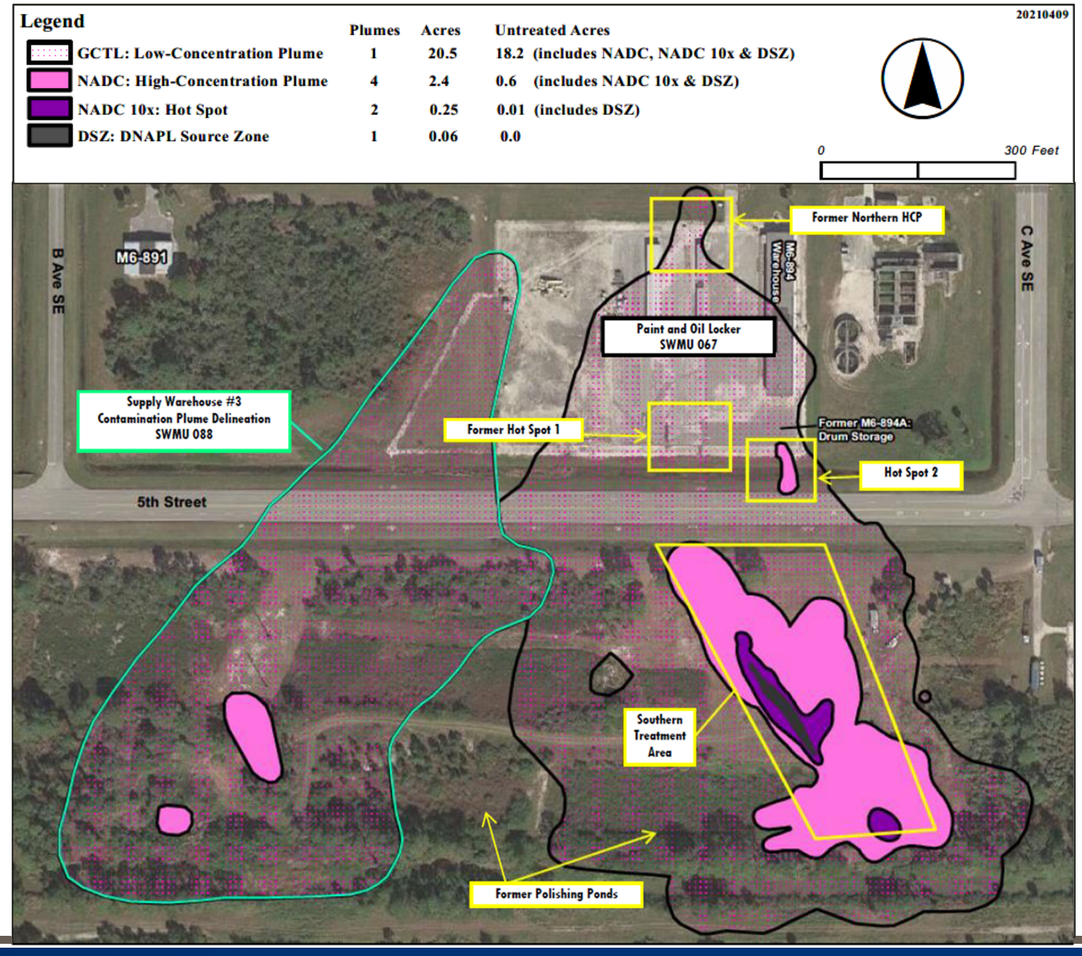
POL Investigation and Interim Measure (IM) History

- 1997: Solid Waste Management Unit (SWMU) assessment was conducted
 - Volatile Organic Compound (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals were detected in sediment
 - VOCs, PAHs, and metals were found in soil
 - Metals, greases and oil were found in surface water
 - VOCs were detected in groundwater
- January 2001: Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) conducted
 - Indicated a Trichloroethylene (TCE) source zone (SZ) in the southern portion of the POL Facility (fenced-in area)
- October 2000: Consensus reached to proceed with excavation and on-site ex-situ treatment
- February 2001: Land Use Controls implemented at POL
- April 2002: Dense non-aqueous phase liquid (DNAPL) SZ excavation completed and installation of MW0012S - MW0023D2
- December 2004: Corrective Measures Design approved
 - Chemical oxidation and biological stimulation injection performed on groundwater near 5th Street
- December 2007: Final chemical oxidation and biological stimulation injection completed

POL Investigation and IM History (continued)

- April 2008 - July 2013: Direct Push Technology (DPT) groundwater investigations
- February 2011: Team consensus reached to initiate a Remedial Alternatives Evaluation (RAE) north of 5th Street
 - RAE consisted of AS, AS/soil vapor extraction, and biological stimulation
- October 2011: Team consensus reached on installation of air sparge system
- February - July 2013: POL Hot Spot (HS) 1, HS 2, and Northern high concentration plume (HCP) sparging
 - System installation utilizing existing treatment system at adjacent site SW3
- June 2013: AS system startup in HS 1 and HS 2 areas
- January 2015 – July 2016: Consensus reached to expand the AS system for Northern HCP treatment, subsequently installed in July 2016.

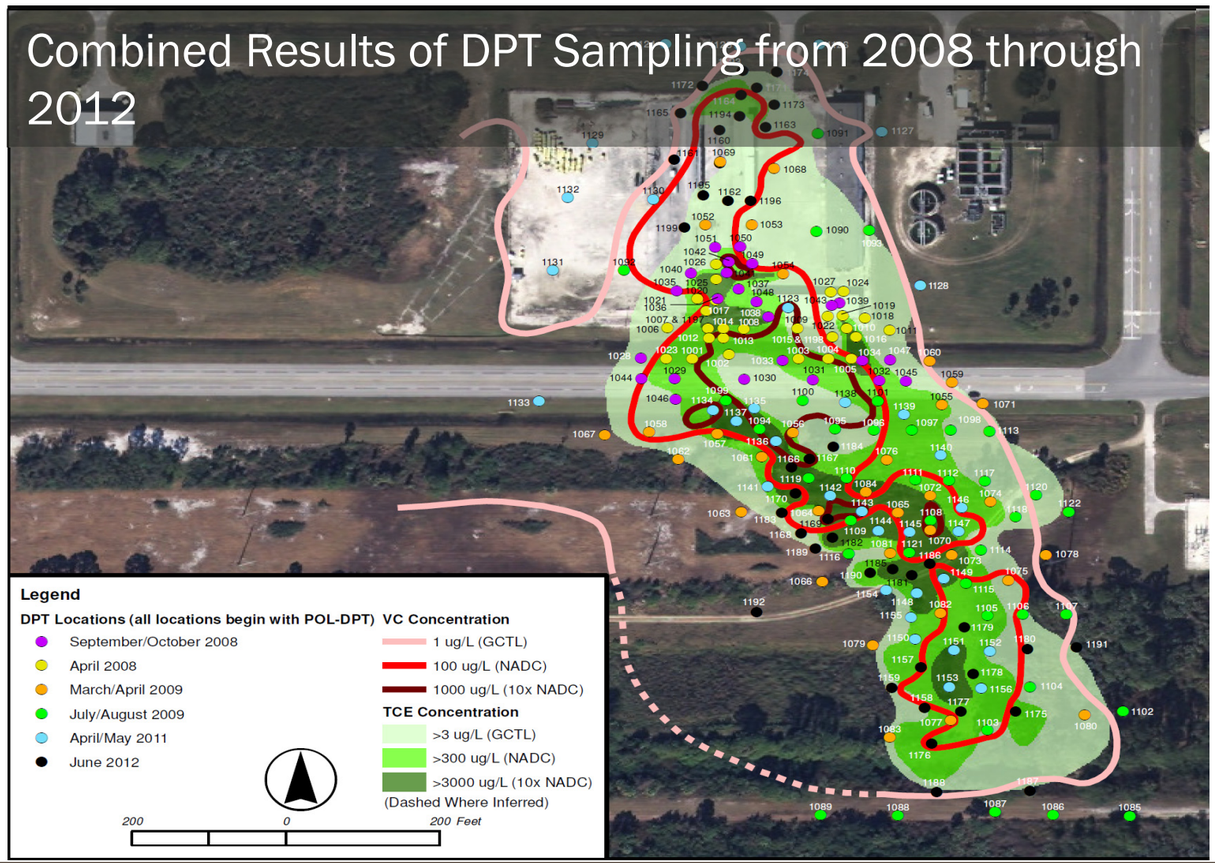
2019 POL and SW3 Site Map and Plume

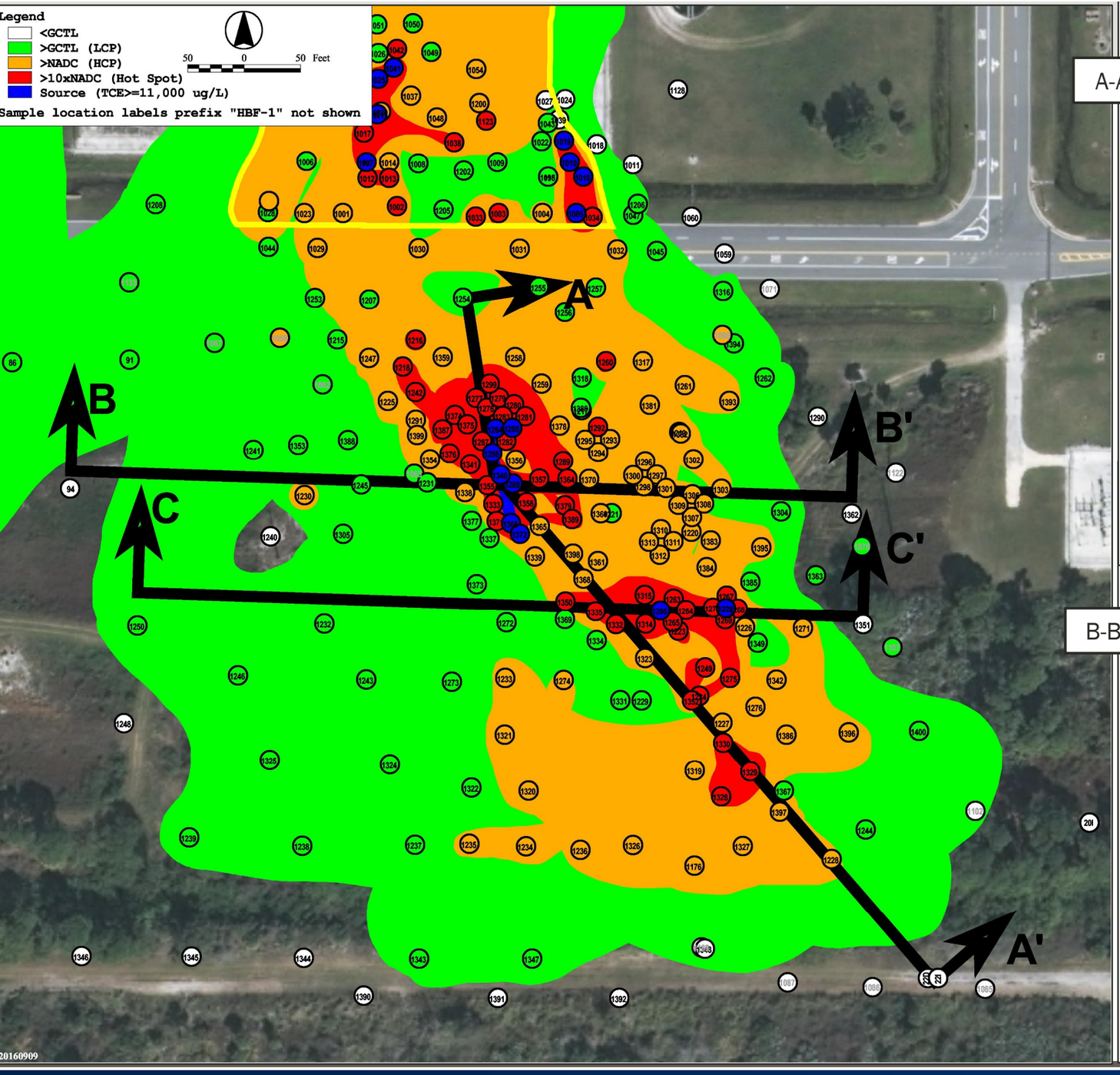


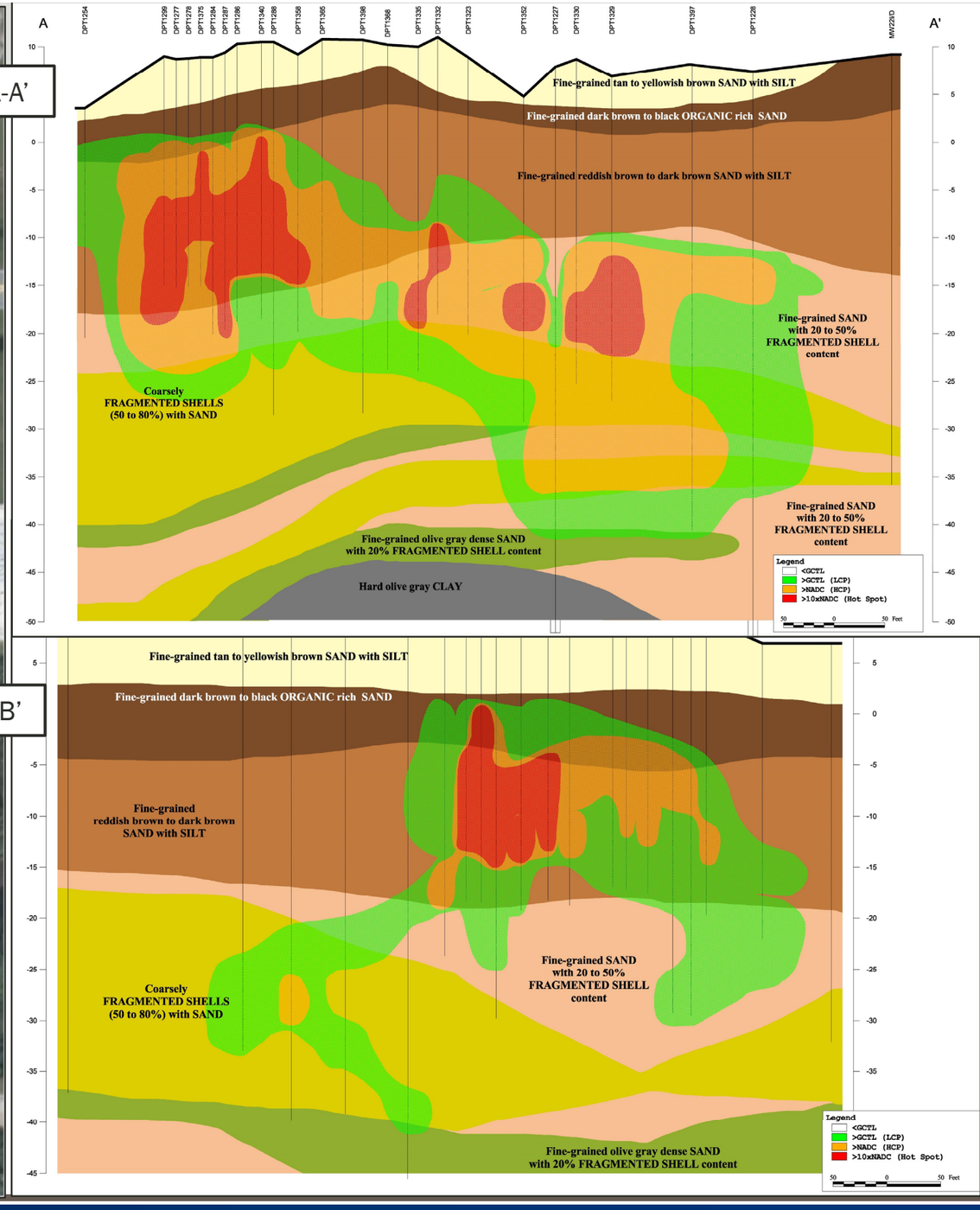
POL Investigation and IM History (continued)

Historical DPT Investigations (2008-2022):

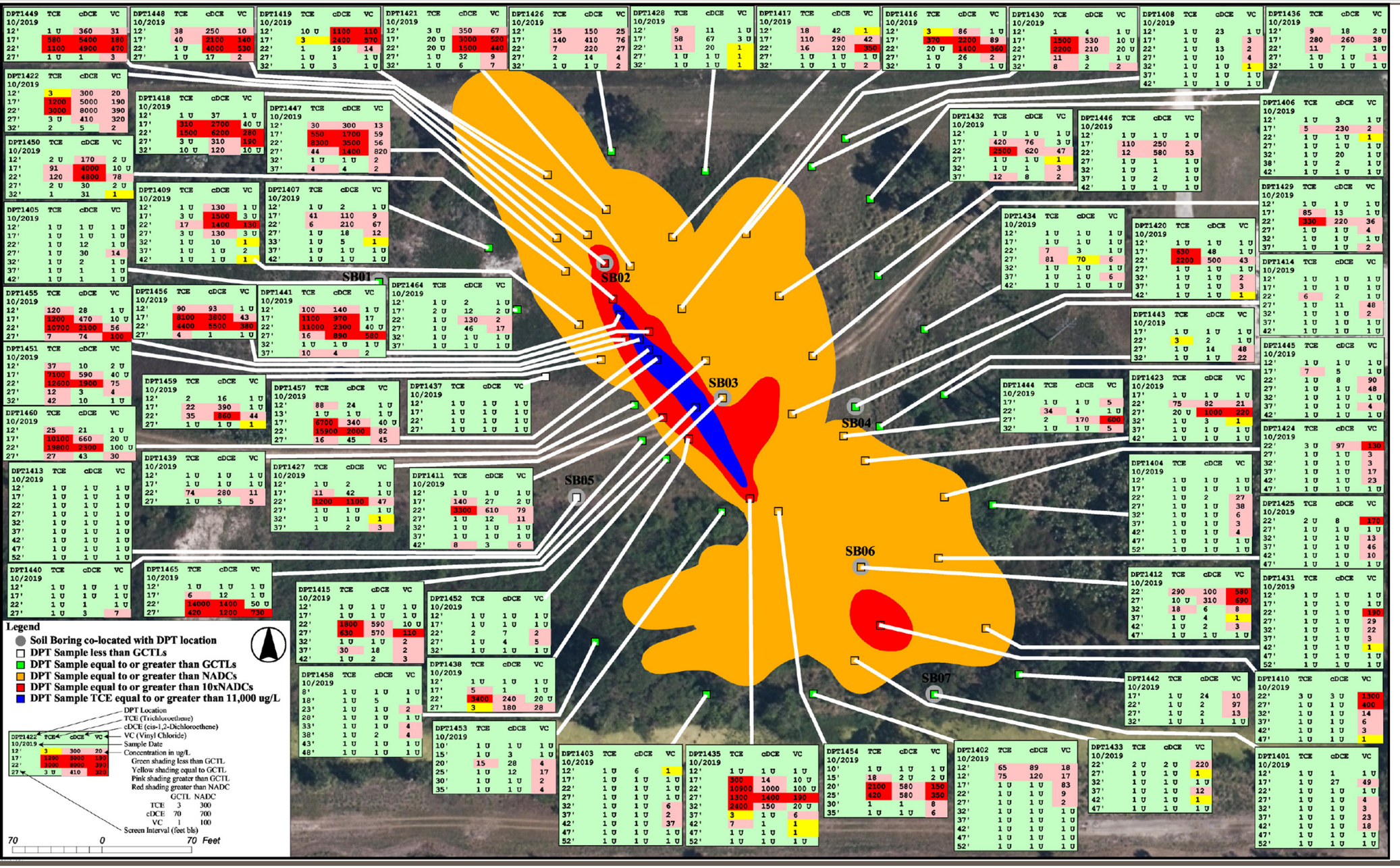
- April 2008: Identified two additional HSs
- September and October 2008: Delineated new HSs
- March to April 2009: Identified third HS south of 5th Street
- July - August 2009 and April - May 2011: Continued delineation
- June 2012: New TCE plume identified in northern POL area
- June - July 2013: Continued delineation in Northern TCE HCP, low-concentration Vinyl Chloride (VC) plume, and southern portion of POL
- September 2014 - July 2016: Continued delineation of southern portion of POL
- December 2016: Consensus reached that plume (including sitewide low concentration plume (LCP), and HS and HCP areas south of 5th Street) were fully delineated (1612-M4, D4 and D7)
- October 2019: Confirmed and refined the plumes with additional sampling
- January - February 2021: POL Southern Treatment Area air sparging system start up and full-scale operation
- October - November 2021: Confirmed that no LCP migration has occurred offsite
- August 2022: Confirmed that the monitoring well network is adequate, and the LCP plume has not migrated




Legend
<GCTL
>GCTL (LCP)
>NADC (HCP)
>10xNADC (Hot Spot)
Source (TCE>=11,000 ug/L)
50 0 50 Feet
Sample location labels prefix "HBF-1" not shown
A
A'
B
B'
C
C'
20160909


A-A'
A
A'
Fine-grained tan to yellowish brown SAND with SILT
Fine-grained dark brown to black ORGANIC rich SAND
Fine-grained reddish brown to dark brown SAND with SILT
Fine-grained SAND with 20 to 50% FRAGMENTED SHELL content
Coarsely FRAGMENTED SHELLS (50 to 80%) with SAND
Fine-grained SAND with 20 to 50% FRAGMENTED SHELL content
Fine-grained olive gray dense SAND with 20% FRAGMENTED SHELL content
Hard olive gray CLAY
Legend
<GCTL
>GCTL (LCP)
>NADC (HCP)
>10xNADC (Hot Spot)
50 0 50 Feet
B-B'
Fine-grained tan to yellowish brown SAND with SILT
Fine-grained dark brown to black ORGANIC rich SAND
Fine-grained reddish brown to dark brown SAND with SILT
Coarsely FRAGMENTED SHELLS (50 to 80%) with SAND
Fine-grained SAND with 20 to 50% FRAGMENTED SHELL content
Fine-grained olive gray dense SAND with 20% FRAGMENTED SHELL content
Legend
<GCTL
>GCTL (LCP)
>NADC (HCP)
>10xNADC (Hot Spot)
50 0 50 Feet

POL Baseline DPT Sampling Event (October 2019)



Data presented in Jan-20 Work Plan

2019 DPT Results:

- Plume migration (southeast) and degradation had occurred since the 2016 Site Characterization
- TCE SZ migrated southeast
- Northern HS footprint decreased and migrated southeast
- HCP migrated west along the western edge of the plume
- Maximum TCE concentration of 19,800 µg/L was detected at DPT location 1460 in the 20-24 ft interval

Based on the results:

- The HCP plume delineation was revised
- The AS network layout was revised to extend further to the west
- The PM Plan was revised

POL and SW3 LCP DPT Confirmation Sampling Event (October 2021)

In support of the POL Southern Treatment Area performance sampling and SW3 annual LTM (detailed in later slides), DPT groundwater sampling was conducted in October 2021 to evaluate the LCP boundaries and ensure the VOC plume is adequately delineated.

DPT Sampling Goals:

- Confirm the presence or absence of LCP migration of POL Southern Treatment Area and SW3

DPT Study Details:

- 13 DPT locations to bound the POL Southern Treatment Area
- 13 DPT locations to bound the SW3 southern area
- 199 groundwater samples collected (105 samples collected at SW3 and 94 samples collected at POL)
- Mobile laboratory analysis
- DPT locations were selected to investigate:
 - LCP plume boundaries and whether any LCP migration has occurred
- DPT depth Intervals:
 - 10 to 14, 15 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, and 50 to 54 feet bls

 Note: not all DPT locations were sampled across these 9 intervals

POL LCP Boundary:

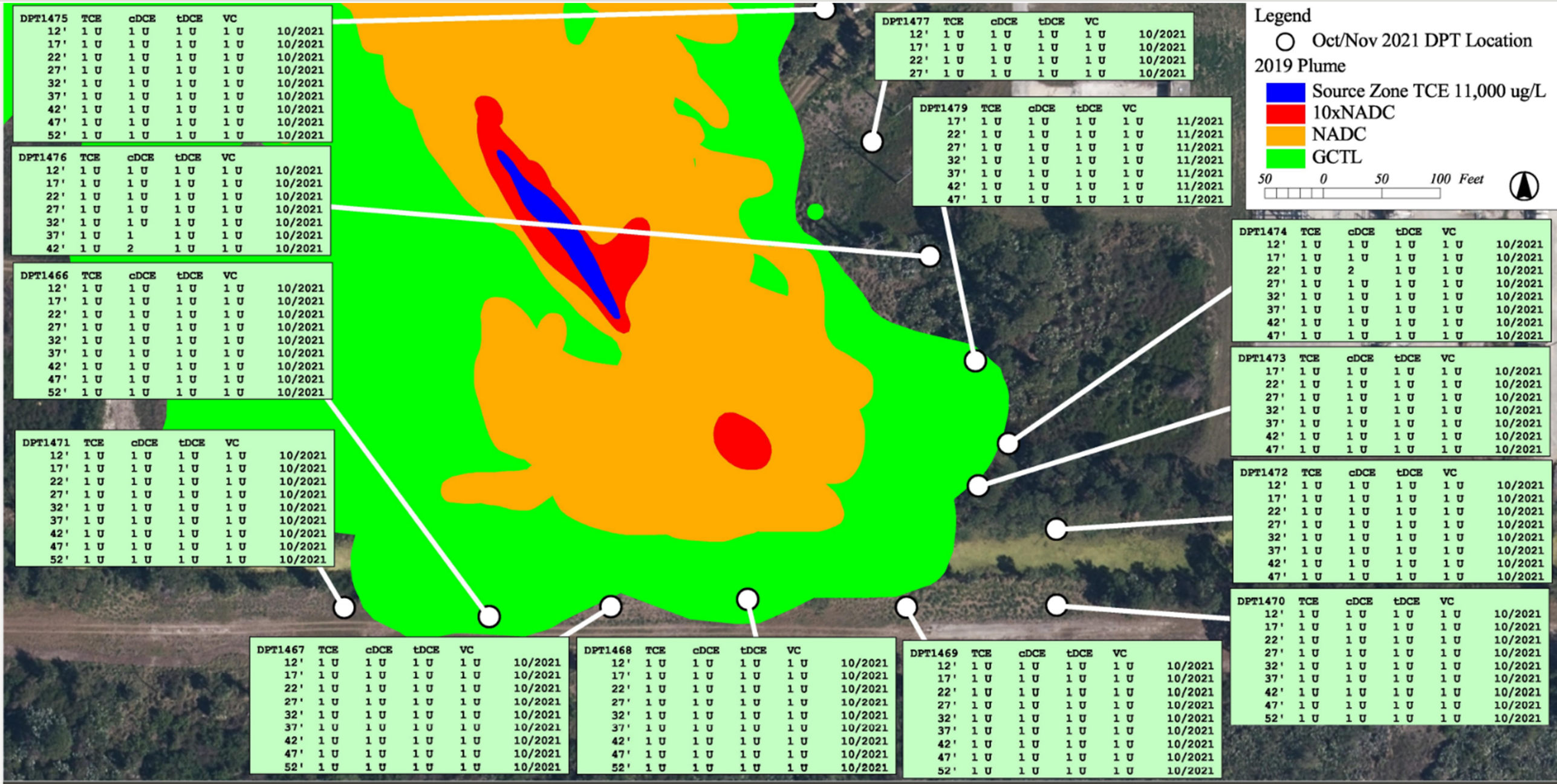
- TCE, trans-1,2-Dichloroethene (tDCE), and VC were observed at concentrations below the laboratory method detection limit in all boundary samples collected
- cis-1,2-Dichloroethene (cDCE) was detected in three samples: DPT1476 in the 35 to 39 feet bls interval (1 µg/L) and in the 40 to 44 feet bls interval (2 µg/L), and in DPT1474 in the 20 to 24 bls interval (2 µg/L)

SW3 LCP Boundary:

- Along the western edge of the LCP boundary, VC was detected at a concentration of 2 µg/L in DPT0126 in the 30 to 34 feet bls interval, exceeding the State of Florida Groundwater Cleanup Target Level (GCTL). All other samples were below the laboratory method detection limit for TCE, cDCE, tDCE, and VC
- Along the eastern edge of the LCP boundary, VC was detected at a concentration of 2 µg/L in DPT0132 in the 35 to 39 feet bls interval, exceeding the Florida GCTL

October 2021 POL DPT LCP Delineation Analytical Results

TETRA TECH



DPT1475	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1476	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1	1 U	1 U	10/2021
42'	1 U	2	1 U	1 U	10/2021

DPT1466	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1471	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1467	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1468	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1469	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1470	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021
52'	1 U	1 U	1 U	1 U	10/2021

DPT1472	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021

DPT1473	TCE	cDCE	tDCE	VC	
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021

DPT1474	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	2	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021
32'	1 U	1 U	1 U	1 U	10/2021
37'	1 U	1 U	1 U	1 U	10/2021
42'	1 U	1 U	1 U	1 U	10/2021
47'	1 U	1 U	1 U	1 U	10/2021

DPT1479	TCE	cDCE	tDCE	VC	
17'	1 U	1 U	1 U	1 U	11/2021
22'	1 U	1 U	1 U	1 U	11/2021
27'	1 U	1 U	1 U	1 U	11/2021
32'	1 U	1 U	1 U	1 U	11/2021
37'	1 U	1 U	1 U	1 U	11/2021
42'	1 U	1 U	1 U	1 U	11/2021
47'	1 U	1 U	1 U	1 U	11/2021

DPT1477	TCE	cDCE	tDCE	VC	
12'	1 U	1 U	1 U	1 U	10/2021
17'	1 U	1 U	1 U	1 U	10/2021
22'	1 U	1 U	1 U	1 U	10/2021
27'	1 U	1 U	1 U	1 U	10/2021

October 2021 SW3 DPT LCP Delineation Analytical Results

TETRA TECH



POL Southern Treatment Area DPT Confirmation Sampling Event (August 2022)

TETRA TECH

DPT Sampling Goals:

- Confirm the Year 1 PM analytical results of the SZ and HS areas
- Determine whether any SZ or HS plume migration has occurred that was not captured by the monitoring well network

DPT Study Details:

- 11 DPT locations
- 60 groundwater samples collected
- Fixed-base laboratory analysis
- DPT locations were selected to investigate:
 - TCE SZ, 3 locations
 - HS, 5 locations
 - HCP, 3 locations
- DPT depth Intervals:
 - 10 to 14, 15 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, and 50 to 54 feet bls

 Note: Samples not collected from all 9 intervals at all DPT locations

TCE was detected in two samples at concentrations exceeding the Florida GCTL:

- DPT1481 – 35 to 39 feet bls – 4.3 µg/L
- DPT1483 – 20 to 24 feet bls – 4 µg/L

VC was detected in four samples at concentrations exceeding the Florida GCTL:

- Peak concentration of 3.1 µg/L in DPT1490 in 35 to 39 feet bls interval

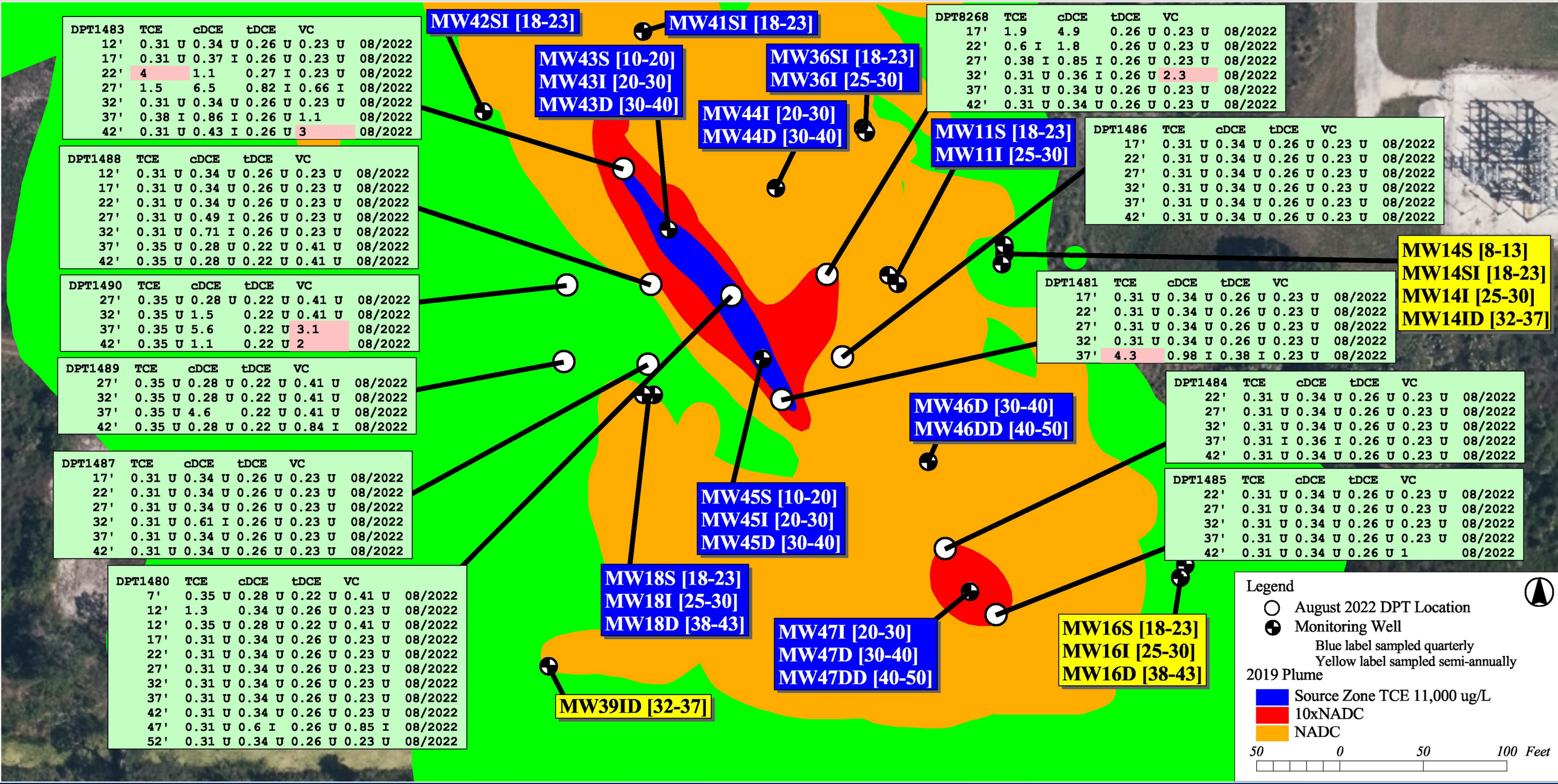
cDCE and tDCE were not detected in any samples exceeding their respective Florida GCTLs

Tetrachloroethylene (PCE) (not a contaminant of concern (COC)) was detected at a concentration of 359 µg/L in DPT1480 in the 10 to 14 feet bls interval

- Location DPT1480 was resampled in the 10 to 14 feet bls interval and a sample was also collected in the 5 to 9 feet bls interval
- PCE was found to be non-detect in the 5 to 9 feet bls interval and in the 10 to 14 feet bls resample and concluded the initial result was a false positive based on historical data and resample results

August 2022 DPT Groundwater Sampling Event

TETRA TECH



DPT1483	TCE	cDCE	tDCE	VC	
12'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
17'	0.31 U	0.37 I	0.26 U	0.23 U	08/2022
22'	4	1.1	0.27 I	0.23 U	08/2022
27'	1.5	6.5	0.82 I	0.66 I	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	0.38 I	0.86 I	0.26 U	1.1	08/2022
42'	0.31 U	0.43 I	0.26 U	3	08/2022

DPT1488	TCE	cDCE	tDCE	VC	
12'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
17'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.49 I	0.26 U	0.23 U	08/2022
32'	0.31 U	0.71 I	0.26 U	0.23 U	08/2022
37'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
42'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022

DPT1490	TCE	cDCE	tDCE	VC	
27'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
32'	0.35 U	1.5	0.22 U	0.41 U	08/2022
37'	0.35 U	5.6	0.22 U	3.1	08/2022
42'	0.35 U	1.1	0.22 U	2	08/2022

DPT1489	TCE	cDCE	tDCE	VC	
27'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
32'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
37'	0.35 U	4.6	0.22 U	0.41 U	08/2022
42'	0.35 U	0.28 U	0.22 U	0.84 I	08/2022

DPT1487	TCE	cDCE	tDCE	VC	
17'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.61 I	0.26 U	0.23 U	08/2022
37'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022

DPT1480	TCE	cDCE	tDCE	VC	
7'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
12'	1.3	0.34 U	0.26 U	0.23 U	08/2022
12'	0.35 U	0.28 U	0.22 U	0.41 U	08/2022
17'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
47'	0.31 U	0.6 I	0.26 U	0.85 I	08/2022
52'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022

DPT8268	TCE	cDCE	tDCE	VC	
17'	1.9	4.9	0.26 U	0.23 U	08/2022
22'	0.6 I	1.8	0.26 U	0.23 U	08/2022
27'	0.38 I	0.85 I	0.26 U	0.23 U	08/2022
32'	0.31 U	0.36 I	0.26 U	2.3	08/2022
37'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022

DPT1486	TCE	cDCE	tDCE	VC	
17'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022

DPT1481	TCE	cDCE	tDCE	VC	
17'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	4.3	0.98 I	0.38 I	0.23 U	08/2022

DPT1484	TCE	cDCE	tDCE	VC	
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	0.31 I	0.36 I	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022

DPT1485	TCE	cDCE	tDCE	VC	
22'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
27'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
32'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
37'	0.31 U	0.34 U	0.26 U	0.23 U	08/2022
42'	0.31 U	0.34 U	0.26 U	1	08/2022

Legend

- August 2022 DPT Location
- Monitoring Well
 - Blue label sampled quarterly
 - Yellow label sampled semi-annually

2019 Plume

- Source Zone TCE 11,000 ug/L
- 10xNADC
- NADC

50 0 50 100 Feet

Baseline Mass Calculations (As Presented in Work Plan)

At POL Southern Treatment Area:

- ~58% of the mass is within the HCP
- ~55% of contamination is within the 20-30 feet bls interval
- TCE constitutes majority of the mass

	TCE				cDCE				VC				Combined
Interval (ft bls)	Dissolved (lb.)	Sorbed (lb.)	Total (lb.)		Dissolved (lb.)	Sorbed (lb.)	Total (lb.)		Dissolved (lb.)	Sorbed (lb.)	Total (lb.)		Total (lb.)
10-20	11.34	27.11	38.44	41%	18.05	18.14	36.19	50%	1.94	0.74	2.67	18%	77.30
20-30	22.38	31.17	53.56	57%	22.55	13.20	35.75	50%	7.38	1.63	9.01	61%	98.32
30-40	0.54	0.81	1.34	1%	0.04	0.02	0.06	0%	1.65	0.39	2.04	14%	3.45
40-50	0.01	0.01	0.01	0%	0.00	0.00	0.00	0%	1.01	0.11	1.12	8%	1.13
Totals:	34.27	59.09	93.36		40.63	31.37	72.00		11.96	2.87	14.84		180.20

- Objective of this IM: Reduce groundwater concentrations within the TCE SZ, HS and HCP of POL Southern Treatment Area to support transition to long-term monitoring (LTM)
- Overall Objective: Reduce groundwater concentrations of TCE, cDCE, and VC to below their respective State of Florida GCTLs

MNA Transition Target Concentrations

COC	NADC (µg/L)
TCE	300
cDCE	700
VC	100

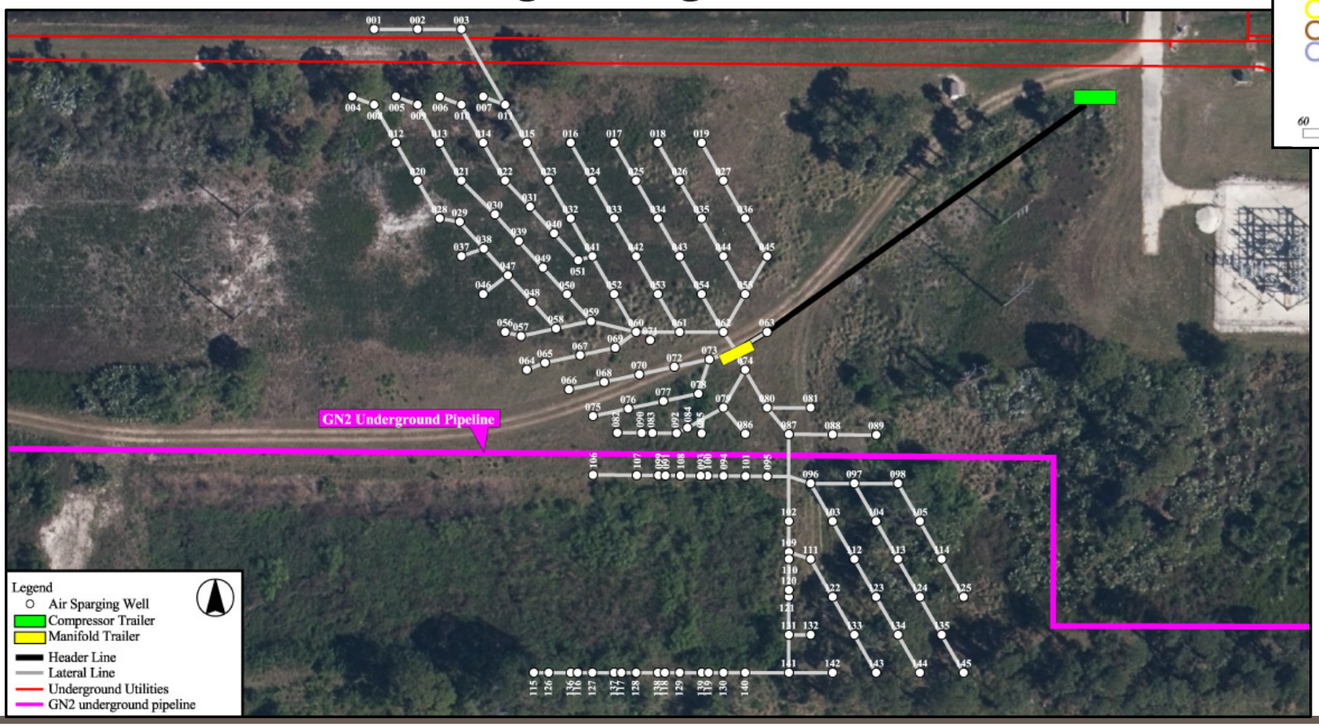
Overall Transition Target Concentrations

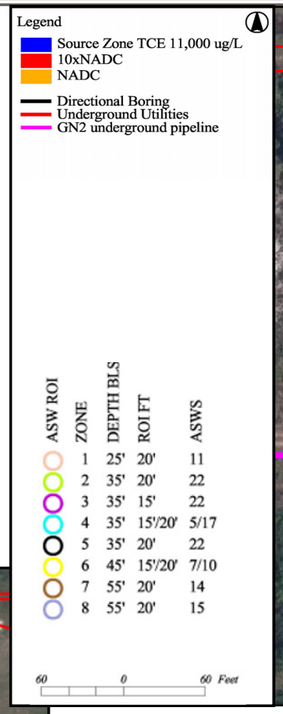
COC	GCTL (µg/L)
TCE	3
cDCE	70
VC	1

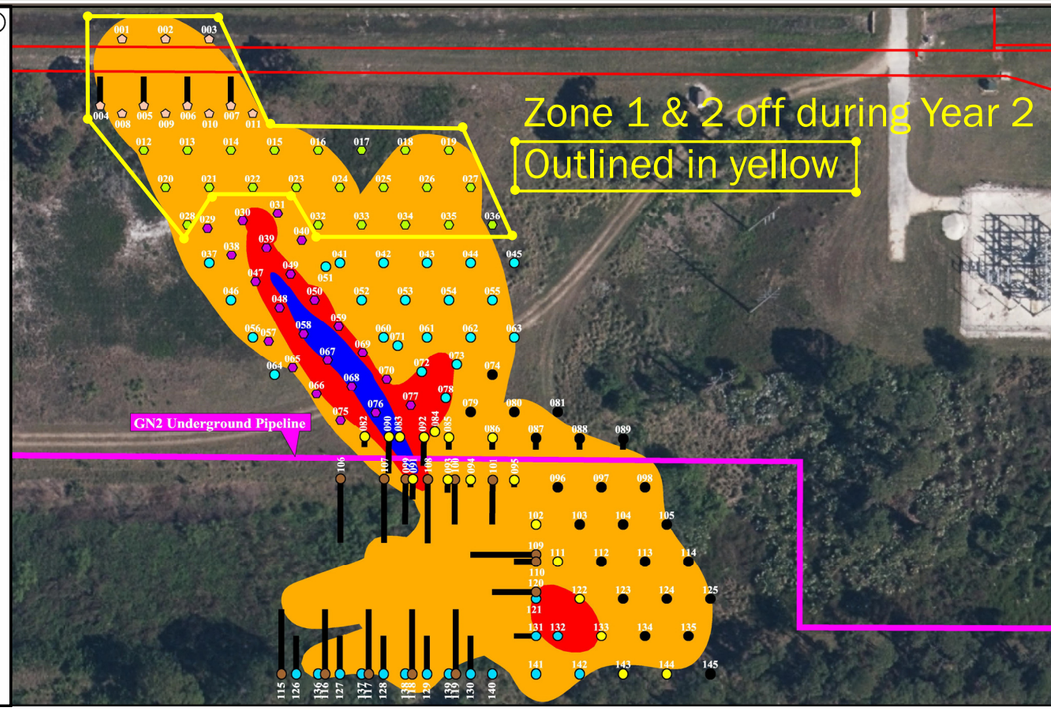
COC = Contaminant of Concern
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Florida Department of Environmental Protection Natural Attenuation Default Criteria

Air Sparge Network Year 2 Operation (Operational Period: September 2022 to June 2023)

- 112 AS Wells operated at 3 depth intervals, 6 Zones
- 75-HP rotary air compressor: 350 standard cubic feet per minute (scfm) at 90 pound per square inch, guage (psig)
- One centrally located distribution manifold trailer
- 1-in I.D. high-density polyethylene (HDPE) lines to each AS well
- Operating pressures: 26.7, 32.2 and 38.4 psig at the shallow-intermediate (Zones 3-5), intermediate (Zone 6), and deep (Zone 8) depths, respectively
 - Pressures meeting IM design criteria







- 66 ASWs in 33-35 feet bls interval (shallow-intermediate interval)
- 17 ASWs in 43-45 feet bls interval (intermediate interval)
- 29 ASWs in the 53-55 feet bls interval (deep interval)
- Radius of Influence (ROI) 15 feet for AS wells within the SZ, and 20 feet for AS wells within the HS and HCP.
- Operating flow rate of 5 cfm; operating flow rate meeting design criteria

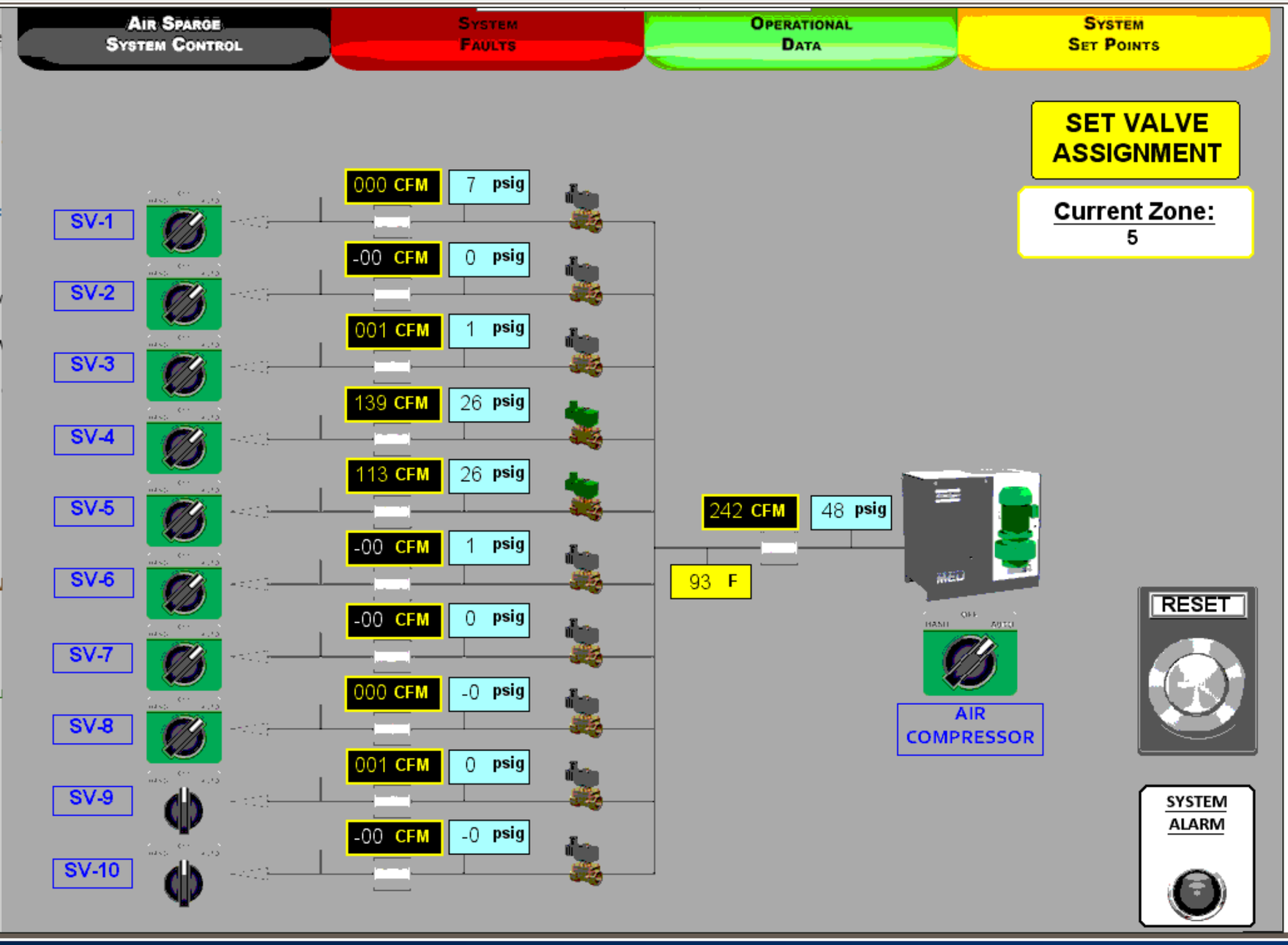
POL Year 2 Pulse Cycle Operating Schedule

Zone [Based on Interval]	Zone Number	Number of AS Wells	Flow Per Well (cfm)	Total Zone Flow (cfm)	Time						Operational Hours/Day	cf/day
					0:00	4:00	8:00	12:00	16:00	20:00		
Shallow 1 [S1]*	Zone 1	11	0	0	-	-	-	-	-	-	0	0
Shallow Intermediate 1 [SI1]*	Zone 2	22	0	0	-	-	-	-	-	-	0	0
Shallow Intermediate 2 [SI2]	Zone 3	22	5	110	110	-	-	110	-	-	8	52,800
Shallow Intermediate 3 [SI3]*	Zone 4	22	5	110	-	110	-	-	110	-	8	52,800
Shallow Intermediate 4 [SI4]*	Zone 5	22	5	110	-	110	-	-	110	-	8	52,800
Intermediate 1 [I1]	Zone 6	17	5	85	-	-	85	-	-	85	8	40,800
Deep 1 [D1]	Zone 7	14	5	70	-	-	70	-	-	70	8	33,600
Deep 2 [D2]	Zone 8	15	5	75	-	-	75	-	-	75	8	36,000
Total AS Wells		145	Total Flow (cfm)		110	220	230	110	220	230	--	268,800
			Within System Specifications?		Under	Under	Under	Under	Under	Under	(Target 90%)	
			Compressor Duty		31%	63%	66%	31%	63%	66%		
			Wells Operating		22	44	46	22	44	46		

*Note: In January 2022, all of the Zone 1 and Zone 2 wells were shut off due to negative influence on 5th Street SE ditch and remained off during the Year 2 PM Period.

In May 2022 11 wells in Zone 3 and 12 wells in Zone 4 were shut off due to negative influence on 5th Street SE ditch.

Telemetry Access/Human Machine Interface



Software access allowed remote monitoring and adjustments of POL air sparging system

IM Performance Evaluation

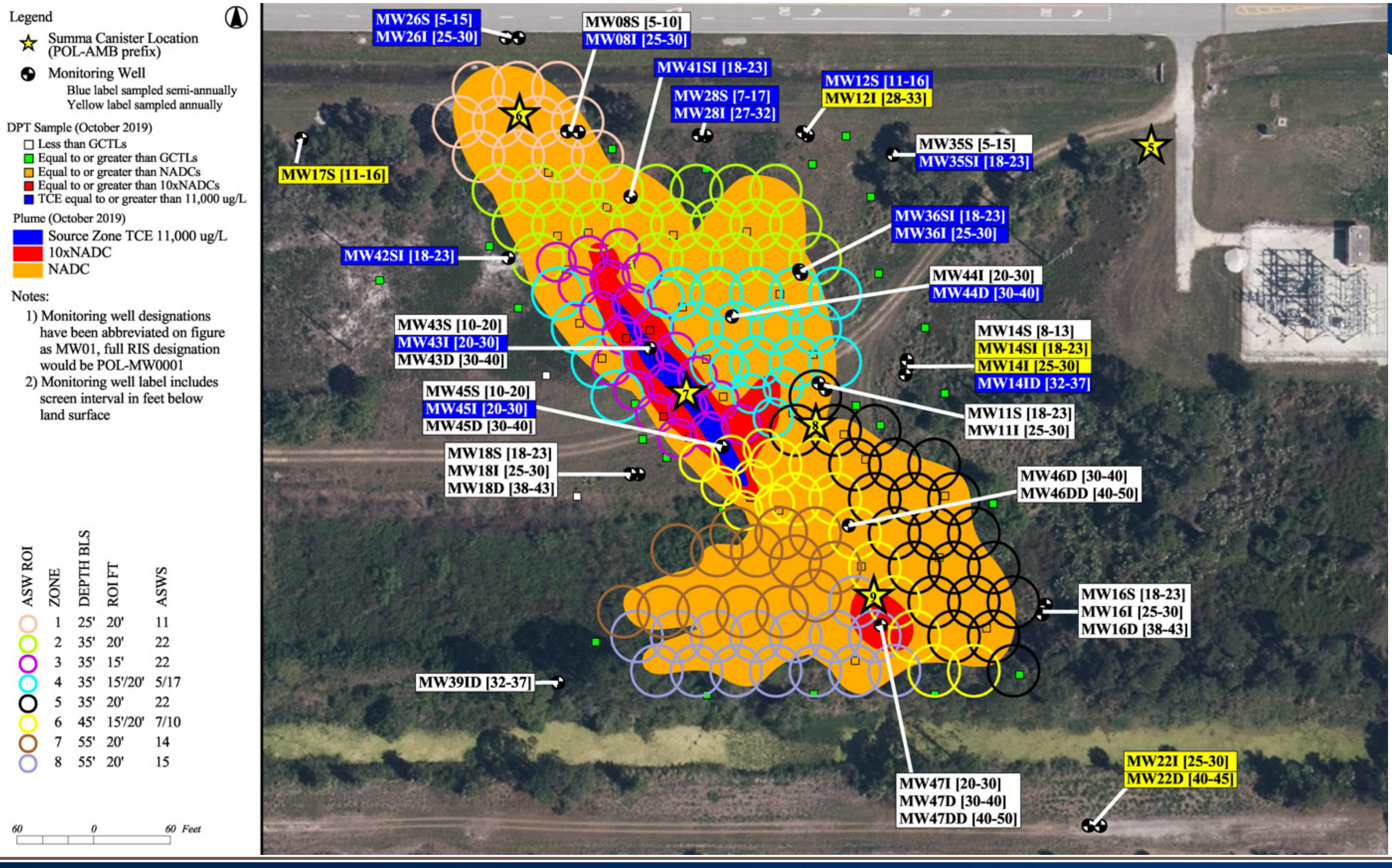
During Year 2 of AS system operation:

- System shut-downs
 - System shut-down ~1 week prior to Q6-Q9 performance groundwater sampling events (October 2022, December 2022, March 2023, and July 2023)
 - Additional system shutdowns included for Hurricane activity (September 2022 and November 2022), unknown electrical fault (February 2023), troubleshooting for short circuit pathways in ditch, to stabilize short circuit after repairing blowout in ditch, power outage and compressor maintenance (March 2023), and 4k compressor maintenance (June 2023)
 - Zone 3 had 11 of the 22 wells shut off since May 2022 due to short circuiting issues in ditches along 5th Steet SE and Zone 4 had 12 of the 22 wells shut off due to short circuiting issues in ditches along 5th Street SE
- AS flows were able to consistently meet the design flow rate of 5 cfm throughout the Year 2 operational period.
 - Note: Select wells in Zones 3 and 4 needed weekly adjustments at the flow regulator to maintain 5 cfm
- During each site visit, the AS wells were observed to meet the design pressures for each respective depth of 26.7 psi (shallow-intermediate depth), 32.2 psi (intermediate depth), and 38.4 psi (deep depth)
- 6 of the original 8 Zones operated during Year 2
 - Zone 1 has remained off since January 2022 due to significant short circuiting in the ditches and Zone 2 was shut off due to short circuiting issues in ditches along 5th Street SE and consistent non-detect VOC concentrations
- On June 12, 2023, upon meeting IM objectives, the AS treatment system was turned off and the compressor trailer was moved to Launch Complex 39B

POL System OM&M, September 2022 - June 2023

TETRA TECH

Operational Reporting Period	Total Available Time			System Operational Time				Downtime Contributing Factor
	Month	Days in Month	Hours in Month	Downtime (day)	Downtime (hr)	Runtime (hr)	Runtime (%)	
(Year 2) Sep-22 to Jun-23	Sep-22	30	720	3.00	72	648	90%	Powered down due to Hurricane Ian.
	Oct-22	31	744	0.00	0	744	100%	No downtime occurred.
	Nov-22	30	720	6.00	144	576	80%	Powered down due to Hurricane Nicole.
	Dec-22	31	744	14.50	348	396	53%	Shutdown for performance sampling.
	Jan-23	31	744	0.00	0	744	100%	No downtime occurred.
	Feb-23	28	672	18.00	432	240	36%	System down for unknown electrical fault.
	Mar-23	31	744	9.50	228	516	69%	Compressor maintenance.
	Apr-23	30	720	0.00	0	720	100%	No downtime occurred.
	May-23	31	744	0.00	0	744	100%	No downtime occurred.
	Jun-23	30	720	1.40	34	686	95%	4K compressor maintenance; system shutdown, compressor trailer moved to Launch Complex 39B.
	Year End Total	**303**	**7,272**	**52.4**	**1,258**	**6,014**	**83%**	


Legend
Summa Canister Location (POL-AMB prefix)
Monitoring Well
Blue label sampled semi-annually
Yellow label sampled annually
DPT Sample (October 2019)
Less than GCTLs
Equal to or greater than GCTLs
Equal to or greater than NADCs
Equal to or greater than 10xNADCs
TCE equal to or greater than 11,000 ug/L
Plume (October 2019)
Source Zone TCE 11,000 ug/L
10xNADC
NADC
Notes:
1) Monitoring well designations have been abbreviated on figure as MW01, full RIS designation would be POL-MW0001
2) Monitoring well label includes screen interval in feet below land surface
ASW ROI
ZONE
DEPTH BLS
ROI FT
ASWS
1 25' 20' 11
2 35' 20' 22
3 35' 15' 22
4 35' 15'/20' 5/17
5 35' 20' 22
6 45' 15'/20' 7/10
7 55' 20' 14
8 55' 20' 15
60 0 60 Feet
MW26S [5-15]
MW26I [25-30]
MW08S [5-10]
MW08I [25-30]
MW41SI [18-23]
MW28S [7-17]
MW28I [27-32]
MW12S [11-16]
MW12I [28-33]
MW17S [11-16]
MW35S [5-15]
MW35SI [18-23]
MW36SI [18-23]
MW36I [25-30]
MW42SI [18-23]
MW44I [20-30]
MW44D [30-40]
MW43S [10-20]
MW43I [20-30]
MW43D [30-40]
MW14S [8-13]
MW14SI [18-23]
MW14I [25-30]
MW14ID [32-37]
MW45S [10-20]
MW45I [20-30]
MW45D [30-40]
MW11S [18-23]
MW11I [25-30]
MW18S [18-23]
MW18I [25-30]
MW18D [38-43]
MW46D [30-40]
MW46DD [40-50]
MW16S [18-23]
MW16I [25-30]
MW16D [38-43]
MW39ID [32-37]
MW47I [20-30]
MW47D [30-40]
MW47DD [40-50]
MW22I [25-30]
MW22D [40-45]

Monitoring Well (POL-)	Year 2 Sampling Frequency	Rationale
MW0008I	Semi-annually	<GCTL throughout Year 1 quarterly sampling events.
MW0012S	Semi-annually	>GCTL during both Year 1 semi-annual events.
MW0012I	Annually	<GCTL throughout Year 1 quarterly sampling events.
MW0014SI	Annually	<GCTL throughout Year 1 quarterly sampling events.
MW0014I	Annually	<GCTL throughout Year 1 quarterly sampling events.
MW0014ID	Semi-annually	<GCTL in both Year 1 semi-annual sampling events.
MW0017S	Annually	VC >GCTL in Sep-2021.
MW0022I	Annually	Non-detect throughout the Year 1 operational period. Retain as the site downgradient monitoring well.
MW0022D	Annually	Non-detect throughout the Year 1 operational period. Retain as the site downgradient monitoring well.
MW0026S	Semi-annually	>GCTL during both Year 1 semi-annual events.
MW0026I	Semi-annually	<GCTL during both Year 1 semi-annual events.
MW0028S	Semi-annually	<GCTL during both Year 1 semi-annual events.
MW0028I	Semi-annually	<GCTL during both Year 1 semi-annual events. Downgradient of MW0034S.
MW0035SI	Semi-annually	<GCTL during both Year 1 semi-annual events. Downgradient of MW0034S.
MW0036SI	Semi-annually	<GCTL during last 4 quarterly sampling events.
MW0036I	Semi-annually	<GCTL during Year 1 operational period.
MW0041SI	Semi-annually	<GCTL during Year 1 operational period.
MW0042SI	Semi-annually	>GCTL during 4 of 5 quarters in Year 1 operational period.
MW0043I	Semi-annually	>GCTL during all 5 quarters in Year 1 operational period.
MW0044D	Semi-annually	<GCTL throughout Year 1 operational period.
MW0045I	Semi-annually	<GCTL during last 3 quarters of Year 1 operational period.

TETRA TECH

Year Two Performance Monitoring Plan:

- Semi-annual sampling of 3 shallow wells, 10 intermediate wells, and 2 deep wells
- Annual sampling of 1 shallow well, 4 intermediate wells, and 1 deep well
- Groundwater analyzed for VOCs via United States Environmental Protection Agency (USEPA) Method 8260D
- Air monitoring conducted at five locations in January 2023 and analyzed for the parameters of USEPA Method TO-15

Health and Safety Air Monitoring

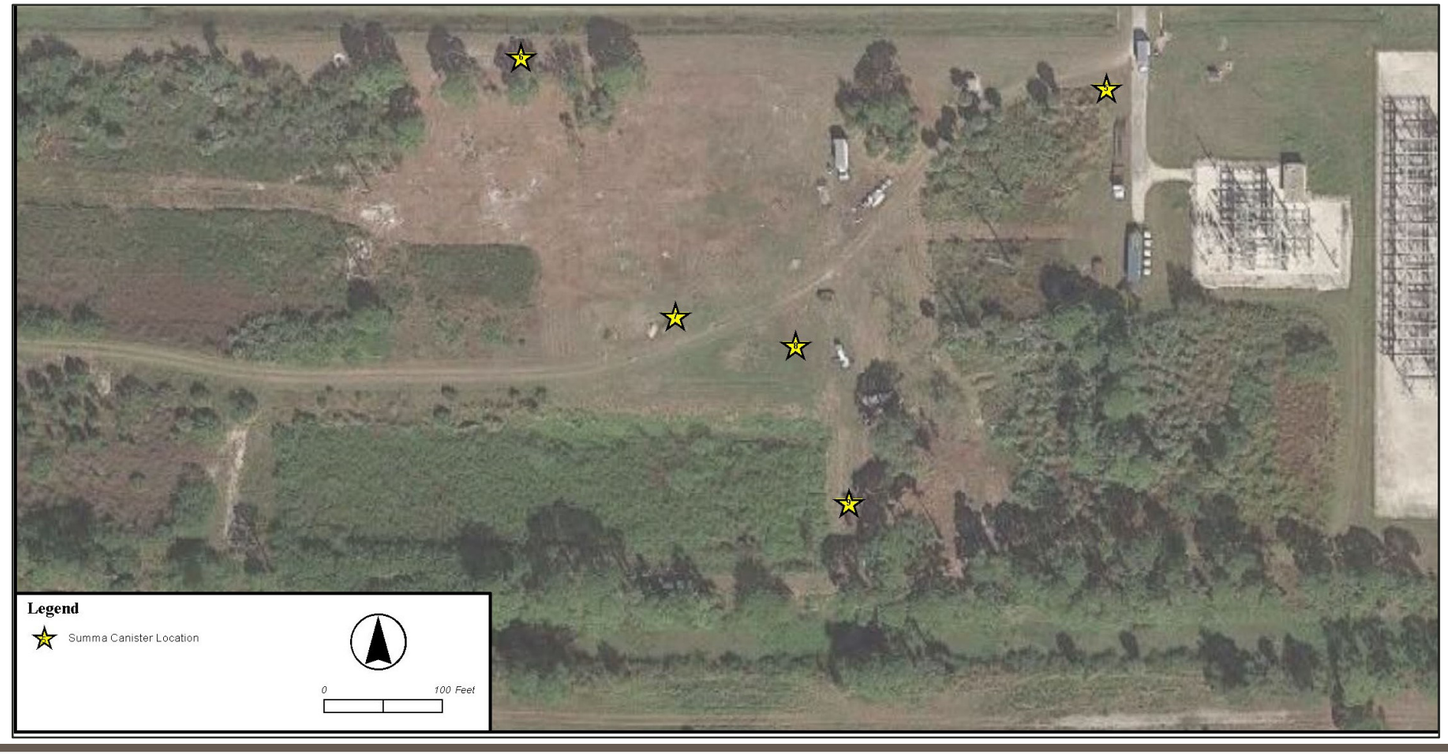
	TCE ($\mu g/m^3$)	cDCE ($\mu g/m^3$)	tDCE ($\mu g/m^3$)	VC ($\mu g/m^3$)
Maximum result	0.97 U	0.79 U	0.70 U	0.31 U
OSHA PEL	540,000	790,000	NV	NV
ACGIH TLV	54,000	793,000	NV	2,600

NV – No Value
U – Analyte not detected
OSHA PEL – Occupational Safety and Health Administration Permissible Exposure Limit
ACGIH TLV – American Conference of Governmental Industrial Hygienists Threshold Limit Values

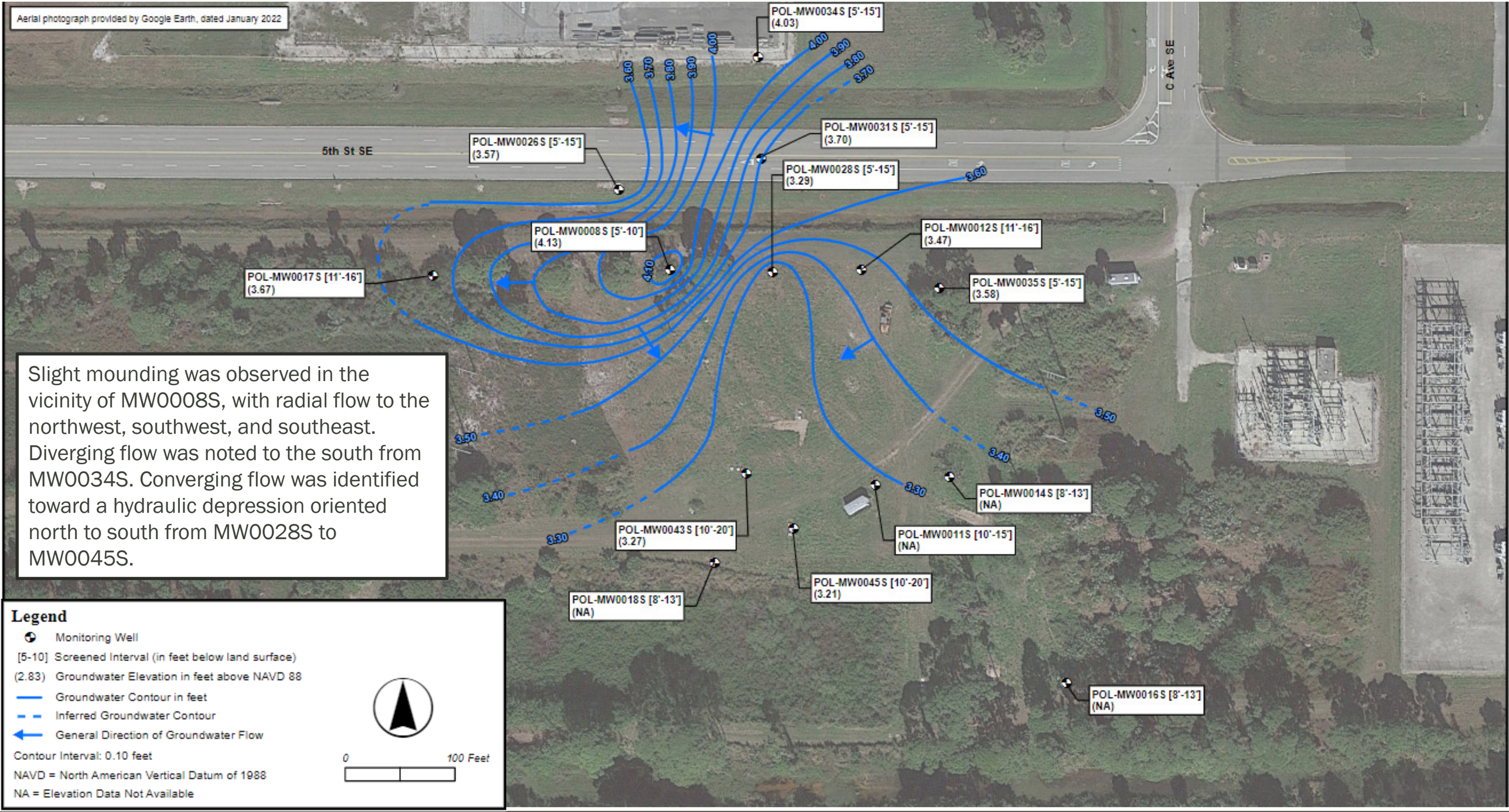
TCE – trichloroethene
cDCE – cis-1,2-dichloroethene
tDCE – trans-1,2-dicholoroethene
VC – vinyl chloride

Air Sampling Overview:

- One round of ambient air samples collected during Year 2 operations
- Samples collected on **January 9, 2023**
- Five samples collected via Summa canisters
- No TCE, cDCE, tDCE, or VC detected in any of the five samples collected

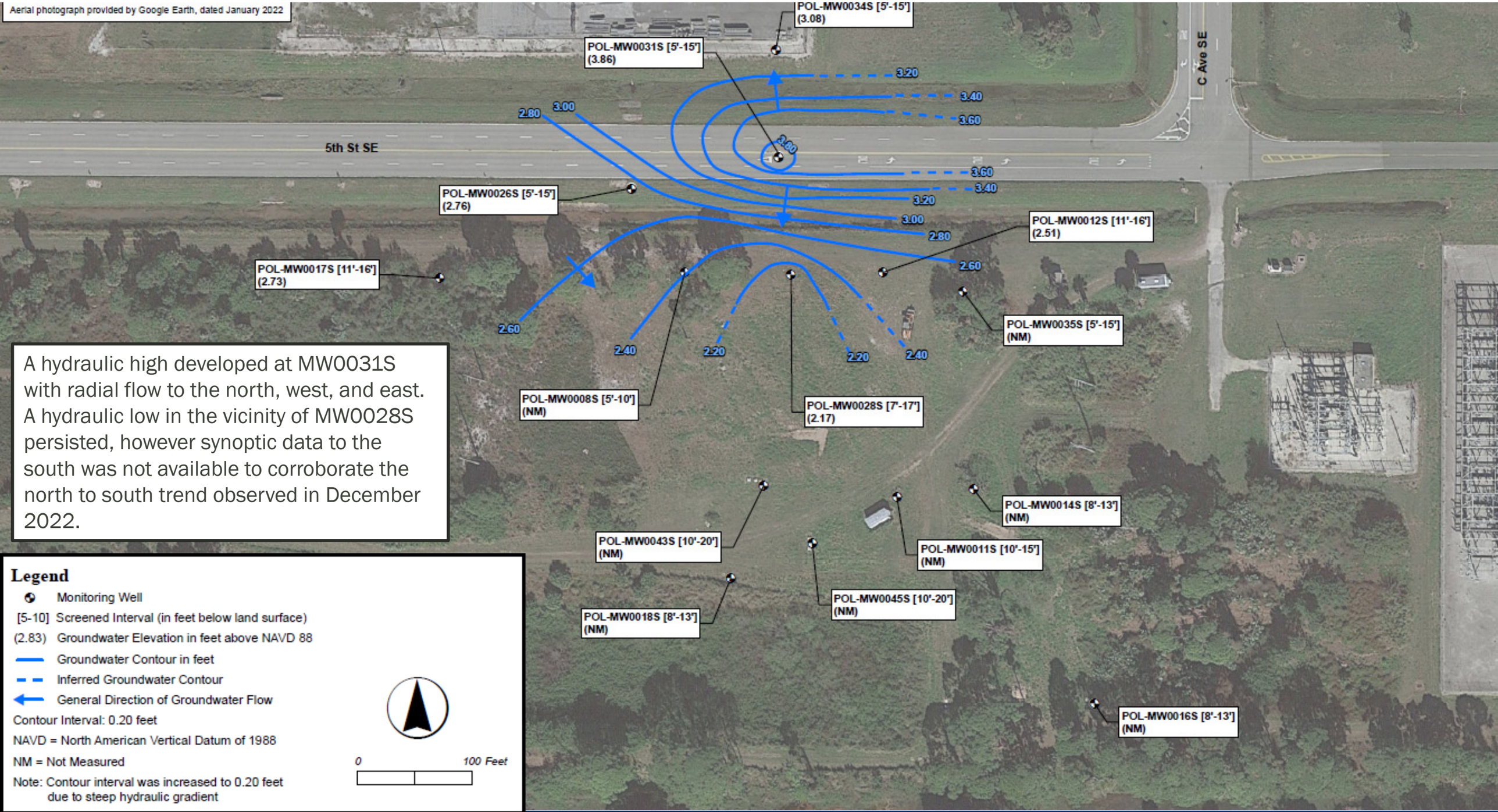


Potentiometric Surface Maps
Shallow Interval: 5 to 20 feet bls



Slight mounding was observed in the vicinity of MW0008S, with radial flow to the northwest, southwest, and southeast. Diverging flow was noted to the south from MW0034S. Converging flow was identified toward a hydraulic depression oriented north to south from MW0028S to MW0045S.

Dec-22 Potentiometric Surface Map - Shallow (5 - 20 feet bls)



A hydraulic high developed at MW0031S with radial flow to the north, west, and east. A hydraulic low in the vicinity of MW0028S persisted, however synoptic data to the south was not available to corroborate the north to south trend observed in December 2022.

Legend

- Monitoring Well
- [5-10] Screened Interval (in feet below land surface)
- (2.83) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

Contour Interval: 0.20 feet

NAVD = North American Vertical Datum of 1988

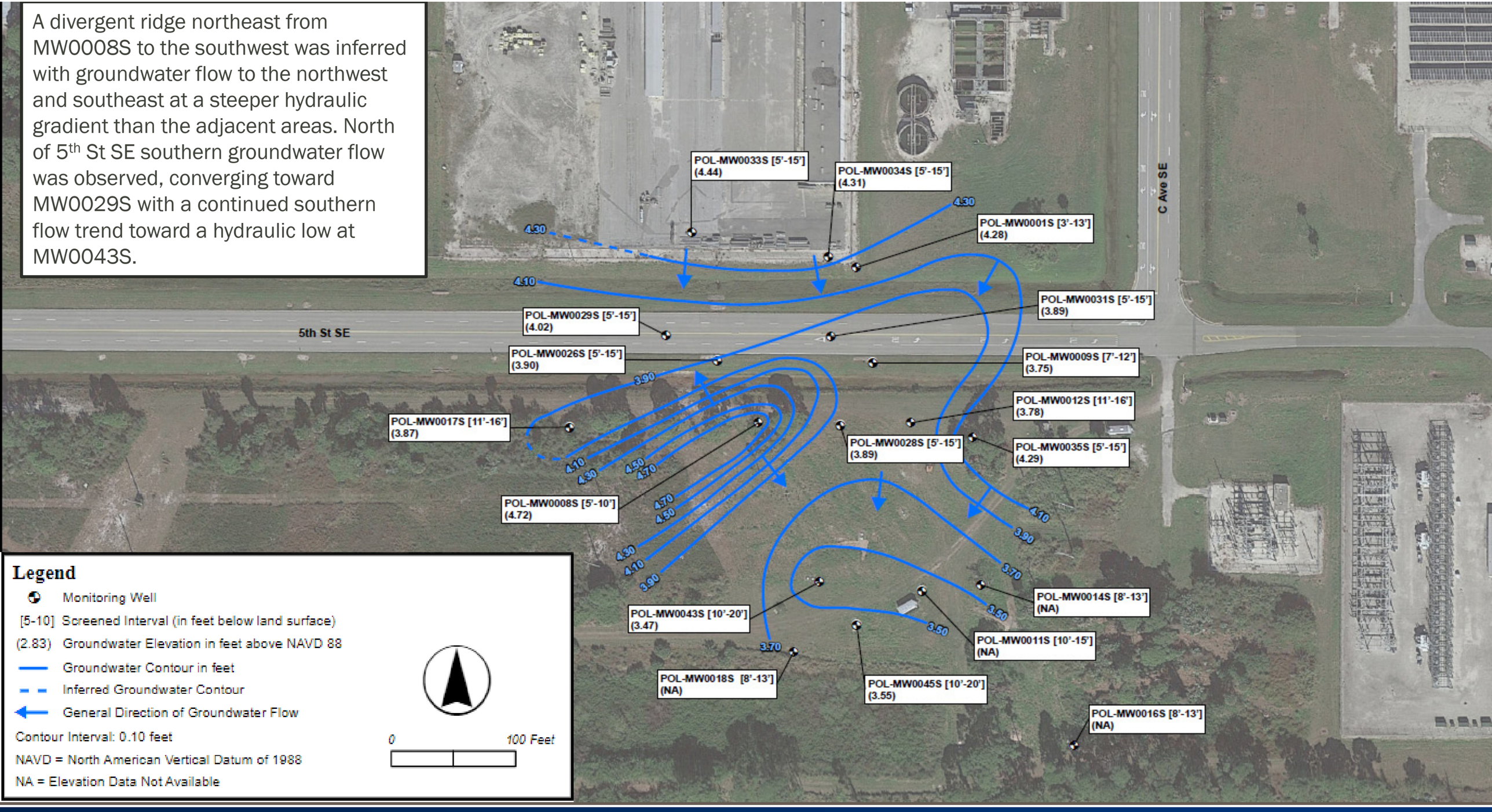
NM = Not Measured

Note: Contour interval was increased to 0.20 feet due to steep hydraulic gradient

0 100 Feet

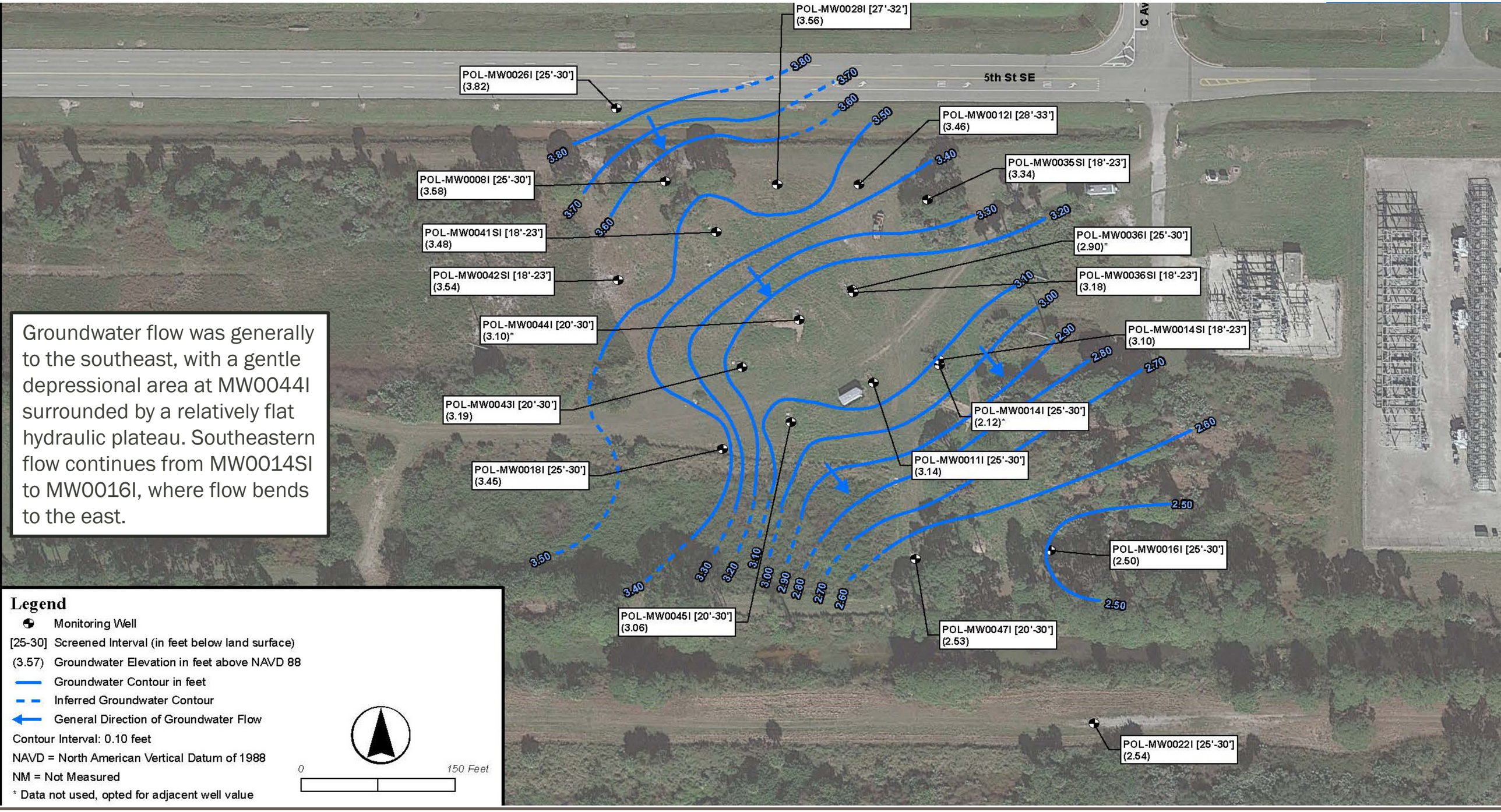
Mar-23 Potentiometric Surface Map – Shallow (5 - 20 feet bls)

A divergent ridge northeast from MW0008S to the southwest was inferred with groundwater flow to the northwest and southeast at a steeper hydraulic gradient than the adjacent areas. North of 5th St SE southern groundwater flow was observed, converging toward MW0029S with a continued southern flow trend toward a hydraulic low at MW0043S.



Jun-23 Potentiometric Surface Map – Shallow (5 - 20 feet bls)

Potentiometric Surface Maps
Intermediate Interval: 20 to 30 feet bls



Groundwater flow was generally to the southeast, with a gentle depressional area at MW0044I surrounded by a relatively flat hydraulic plateau. Southeastern flow continues from MW0014SI to MW0016I, where flow bends to the east.

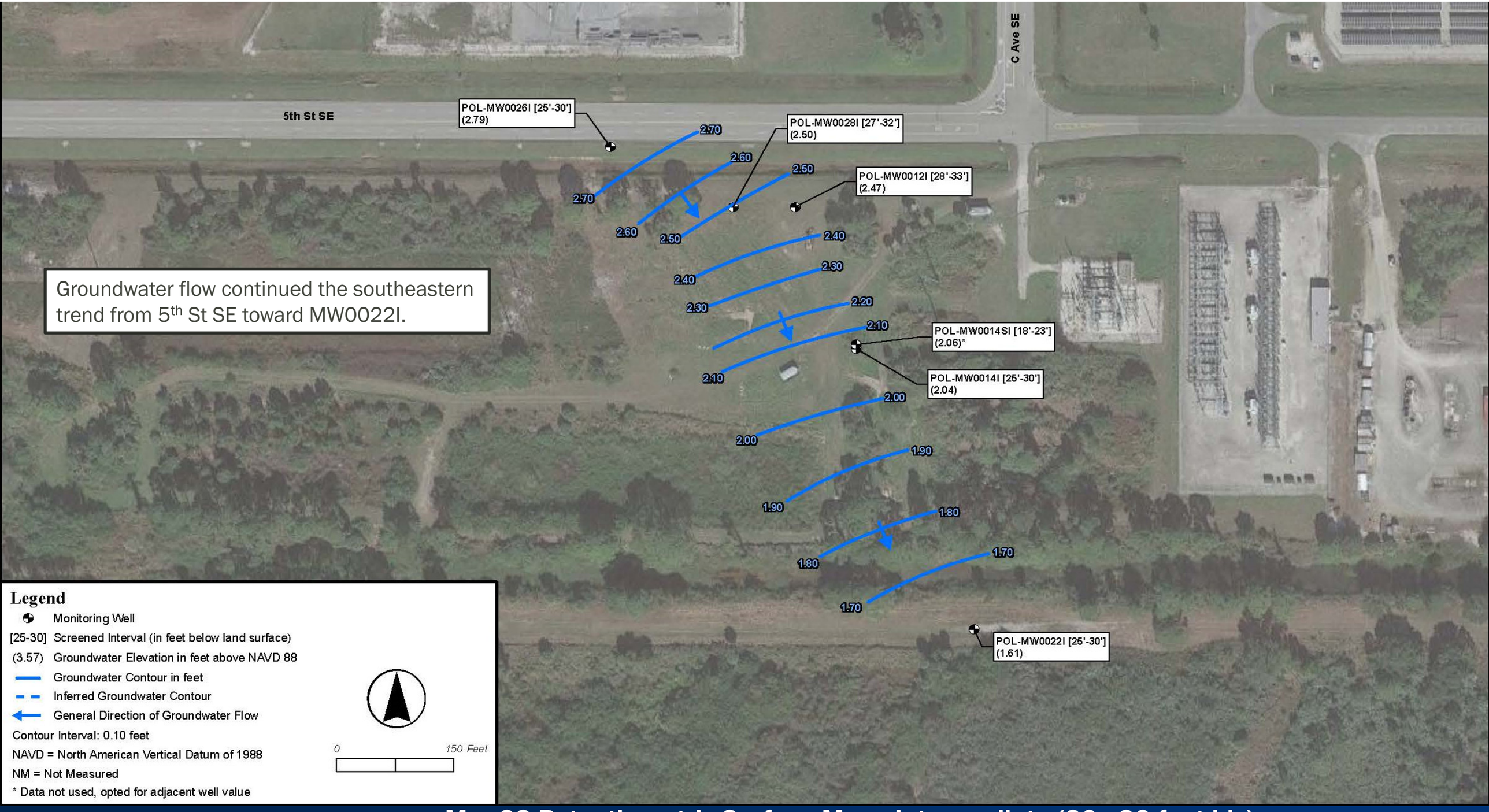
Legend

- Monitoring Well
- [25-30] Screened Interval (in feet below land surface)
- (3.57) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

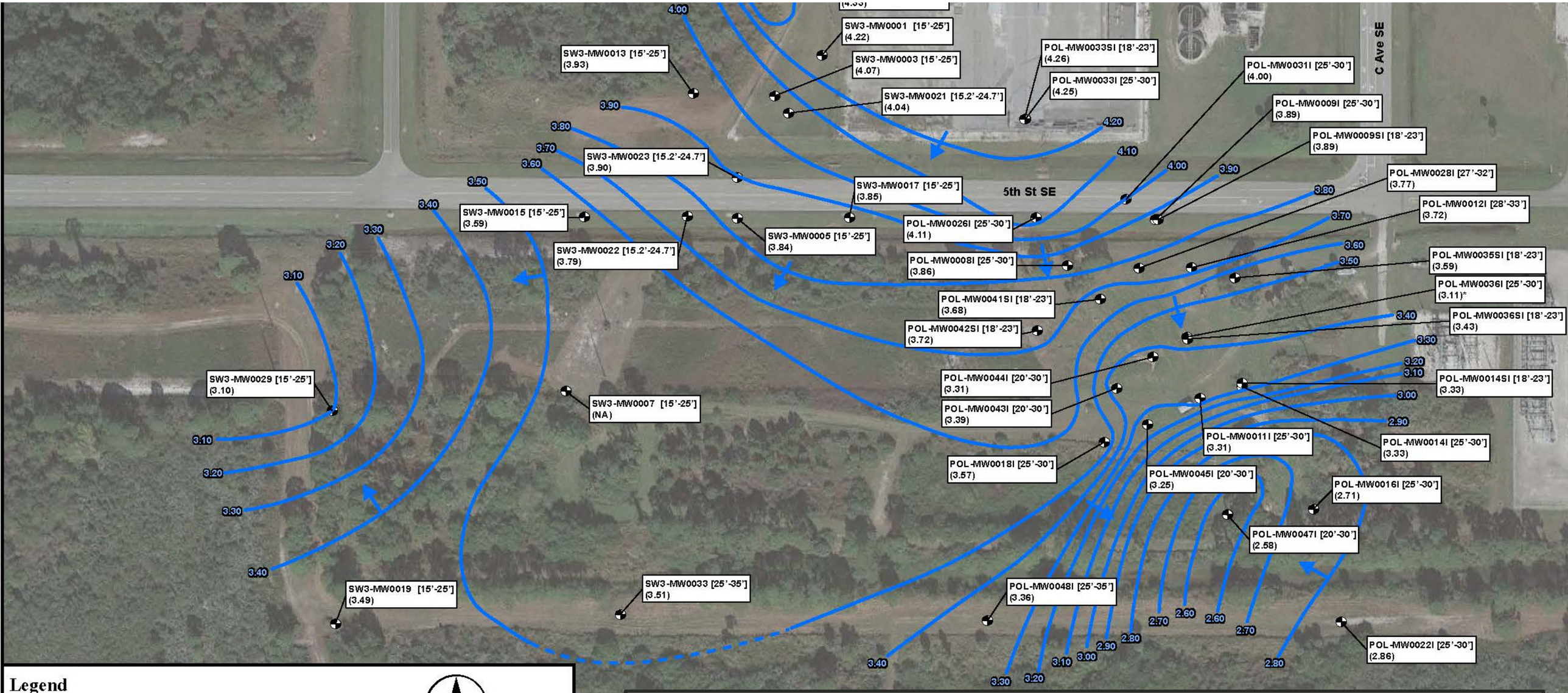
Contour Interval: 0.10 feet
NAVD = North American Vertical Datum of 1988
NM = Not Measured
* Data not used, opted for adjacent well value

0 150 Feet

Dec-22 Potentiometric Surface Map - Intermediate (20 - 30 feet bls)



Mar-23 Potentiometric Surface Map - Intermediate (20 - 30 feet bls)



Legend

- Monitoring Well
- [25-30] Screened Interval (in feet below land surface)
- (3.57) Groundwater Elevation in feet above NAVD 88
- Groundwater Contour in feet
- Inferred Groundwater Contour
- General Direction of Groundwater Flow

Contour Interval: 0.10 feet

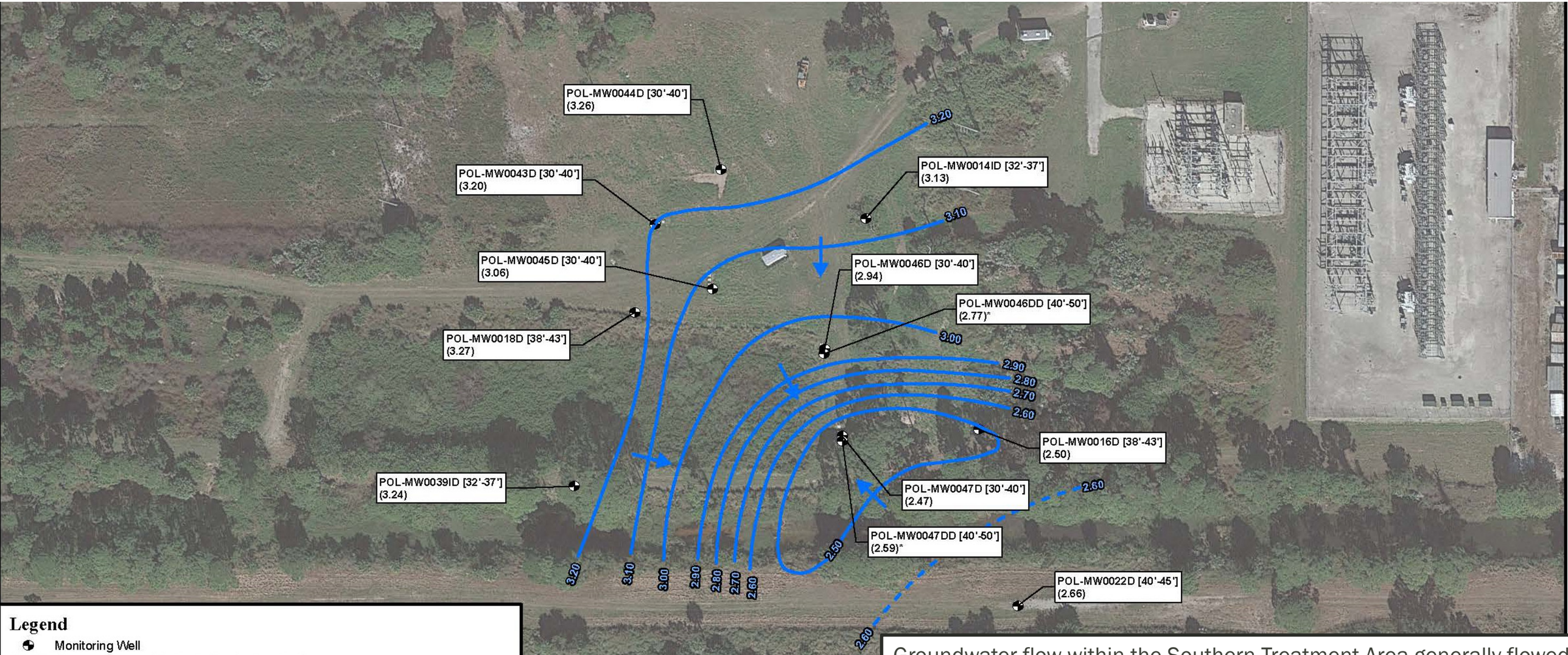
NAVD = North American Vertical Datum of 1988
NA = Elevation not available
* Data not used, opted for adjacent well value

With data points combining the SW3 LTM and POL Southern Treatment Areas, groundwater flow trends continued to the southeast from 5th Street SE across a groundwater plateau toward POL-MW0011I and continued at an increased gradient toward POL- MW0047I. Southern groundwater flow was seen north of 5th St SE toward the center of the STA, bending to the southwest and west toward SW3-MW0029 within the SW3 area.

Jun-23 Potentiometric Surface Map - Intermediate (20 - 30 feet bls)

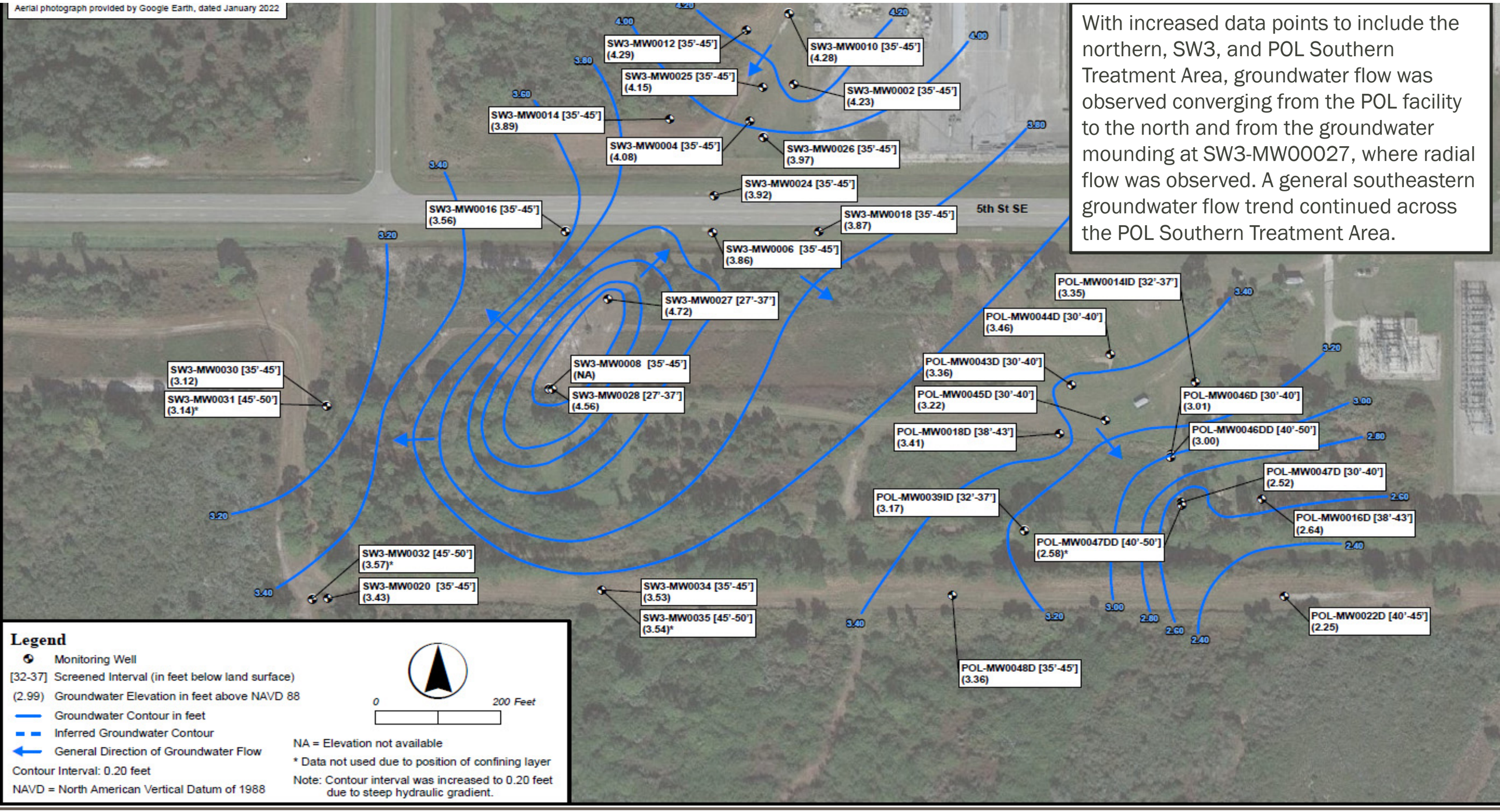
Potentiometric Surface Maps
Deep Interval: 30 to 50 feet bls

Note: March 2023 Deep Contours not available due to insufficient data



Groundwater flow within the Southern Treatment Area generally flowed from the center of the site toward the former polishing pond in the vicinity of POL-MW0047D. Farther southeast, a higher groundwater elevation was observed at POL-MW0022D, which indicated northwestern flow toward the groundwater plateau at POL-MW0047D. No elevation data was collected in the SW3 area during this synoptic event.

Dec-22 Potentiometric Surface Map – Deep (30 - 50 feet bls)



With increased data points to include the northern, SW3, and POL Southern Treatment Area, groundwater flow was observed converging from the POL facility to the north and from the groundwater mounding at SW3-MW00027, where radial flow was observed. A general southeastern groundwater flow trend continued across the POL Southern Treatment Area.

Jun-23 Potentiometric Surface Map – Deep (30 - 50 feet bls)

Year 2 Performance Monitoring Sampling Results Overview

TETRA TECH

Timeline	Oct-22				Dec-22				Mar-23				Jul-23			
Analyte	TCE	cDCE	tDCE	VC	TCE	cDCE	tDCE	VC	TCE	cDCE	tDCE	VC	TCE	cDCE	tDCE	VC
Total Wells Sampled	7	7	7	7	8	8	8	8	13	13	13	13	15	15	15	15
Number of Samples with Detections	3	7	2	2	6	5	1	0	3	10	1	4	9	10	3	2
Number of Samples Exceeding GCTL	0	1	0	2	2	0	0	0	0	1	0	1	2	3	0	1
Number of Samples Exceeding NADC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Highest Concentration (µg/L)	2.0	**100**	6.1	**17**	**9.9**	37	1.9	0	1.3 I	**110**	5.5	**14**	**10**	**100**	3.5	**8.5**
Highest Concentration Well (POL-MW00-)	12S	26S	26S	12S	42SI	42SI	42SI	NA	26S	26S	26S	26S	43I	26S	26S	26S

Note:
tDCE is not part of the COCs but is provided as a TCE daughter product comparison.
Bold indicates levels exceeding the GCTL.

Performance Groundwater Sampling: COCs - Shallow

Monitoring Well (POL-)	Screened Interval (feet bls)	TCE (µg/L)				cDCE (µg/L)				tDCE (µg/L)				VC (µg/L)			
		Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23
MW0012S	11-16	2.0	—	0.36 I	0.27 I	28	—	2.0	0.88 I	2.4	—	0.50 U	0.34 U	17	—	0.50 U	0.40 UJ3
MW0017S	11-16	—	—	0.15 U	—	—	—	0.20U	—	—	—	0.50 U	—	—	—	0.50 U	—
MW0026S	5-15	2.5 UQ	—	1.3 I	1.1	100 Q	—	110	100	6.1 Q	—	5.5	3.5	11 Q	—	14	8.3
MW0028S	5-15	1.1	—	0.27 I	0.20 U	0.93 I	—	0.33 I	0.25 U	0.50 U	—	0.50 U	0.34 U	0.50 U	—	0.50 U	0.40 UJ3

Notes:
U – The analyte was analyzed for but not detected
I – The reported value is between the method detection limit and the laboratory method reporting limit.
J – Laboratory estimated value.
Q – Analyzed outside of holding time.
J3 – Laboratory estimated value, may not be accurate.
Concentration exceeds the State of Florida GCTL
Analyte was detected

- **TCE:** <GCTL in all wells; <NADC in all wells; TCE concentrations have consistently decreased during each sampling event; slight detections in wells MW0012S, MW0026S, and MW0028S.
- **cDCE:** >GCTL in 1 well (MW0026S) in October 2022, March and July 2023; <NADC in all wells..
- **tDCE:** <GCTL in all wells; slight detections observed in MW0026S in March and July 2023.
- **VC:** >GCTL in 2 wells (MW0012S) in October 2022 and (MW0026S) in October 2022, March and July 2023; <NADC in all wells.

Note: MW0026S October 2022 sample was analyzed outside of holding time. Results are consistent with previous and recent events.

Performance Groundwater Sampling: COCs – Intermediate

Monitoring Well (POL-)	Screened Interval (feet bls)	TCE (µg/L)				cDCE (µg/L)				tDCE (µg/L)				VC (µg/L)			
		Oct-22	Dec-22	Mar- 23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23
MW0008I	25-30	——	0.89U	——	0.20 U	——	2.4	-----	0.25 U	——	0.73 U	-----	0.34 U	——	0.71 U	-----	0.40 UJ3
MW0012I	28-33	——	——	0.15 U	-----	——	——	0.34 I	——	——	——	0.50 U	——	——	——	0.52 I	——
MW0014SI	25-30	——	——	0.15 U	——	——	——	0.69 I	——	——	——	0.50 U	——	——	——	0.50 U	——
MW0014I	18-23	——	——	0.15 U	----	——	——	0.21 I	——	——	——	0.50 U	——	——	——	0.50 U	——
MW0022I	25-30	——	——	0.15 U	----	——	——	0.20 U	——	——	——	0.50 U	——	——	——	0.50 U	——
MW0026I	25-30	0.50U	——	0.15 U	0.20 U	2.2	——	2.1	1.8	0.50 U	——	0.50 U	0.34 U	0.50 U	——	0.56 I	0.40 U
MW0028I	27-32	0.50U	——	0.15 U	0.20 U	0.71 I	——	0.32 I	0.71 I	0.50 U	——	0.50 U	0.34 U	0.50 U	—	0.64 I	0.40 U
MW0035SI	18-23	0.50U	——	0.15 U	0.20 U	1.9	——	1.7	0.94 I	0.50 U	——	0.50 U	0.34 U	0.50 U	——	0.50 U	0.40 UJ3
MW0036SI	25-30	——	3.1	——	1.9	——	0.53 U	——	0.25 U	-----	0.73 U	——	0.34 U	——	0.71 U	——	0.40 UJ3
MW0036I	18-23	——	2.4	——	1.7	——	2.7	——	1.4	-----	0.73 U	——	0.34 U	——	0.71 U	—	0.40 UJ3
MW0041SI	18-23	——	2.5	——	3.6	——	4.8	——	6.6	-----	0.73 U	——	1.1	——	0.71 U	——	0.40 UJ3
MW0042SI	18-23	——	9.9	——	3.3	——	37	——	7.2	-----	1.9	——	0.64 I	——	0.71 U	——	0.40 UJ3
MW0043I	20-30	——	3.7	——	10	——	0.53 U	——	0.92 I	-----	0.73 U	——	0.34 U	——	0.71 U	—	0.40 UJ3
MW0045I	20-30	——	0.89 U	——	1.3 I	——	0.53 U	——	0.71 U	-----	0.73 U	——	0.95 U	——	0.71 U	——	0.64 U

Notes:
U – The analyte was analyzed for but not detected
I – The reported value is between the method detection limit and the laboratory method reporting limit.
J3 – Laboratory estimated value, may not be accurate.
Concentration exceeds the State of Florida GCTL
Analyte was detected

- **TCE:** >GCTL in 3 wells. 2 wells (MW0042SI, MW0043I) in December 2022 and 2 wells (MW0041s and MW0043I) in July 2023; <NADC in all wells; Slight detections in two monitoring wells (MW0036SI and MW0036I).
- **cDCE:** <GCTL in all wells; <NADC in all wells; Slight detections in 11 wells (MW0008I, MW0012I, MW0014SI, MW0014I, MW0026I, MW0028I,
- MW0035SI, MW0036I, MW0041SI, MW0042SI, MW00043I).
- **tDCE:** <GCTL in all wells; < NADC in all wells; slight detection in 2 wells (MW0041SI and MW0042SI).
- **VC:** <GCTL in all wells; <NADC in all wells; Slight detections in 3 wells (MW0012I, MW0026I, MW0028I).

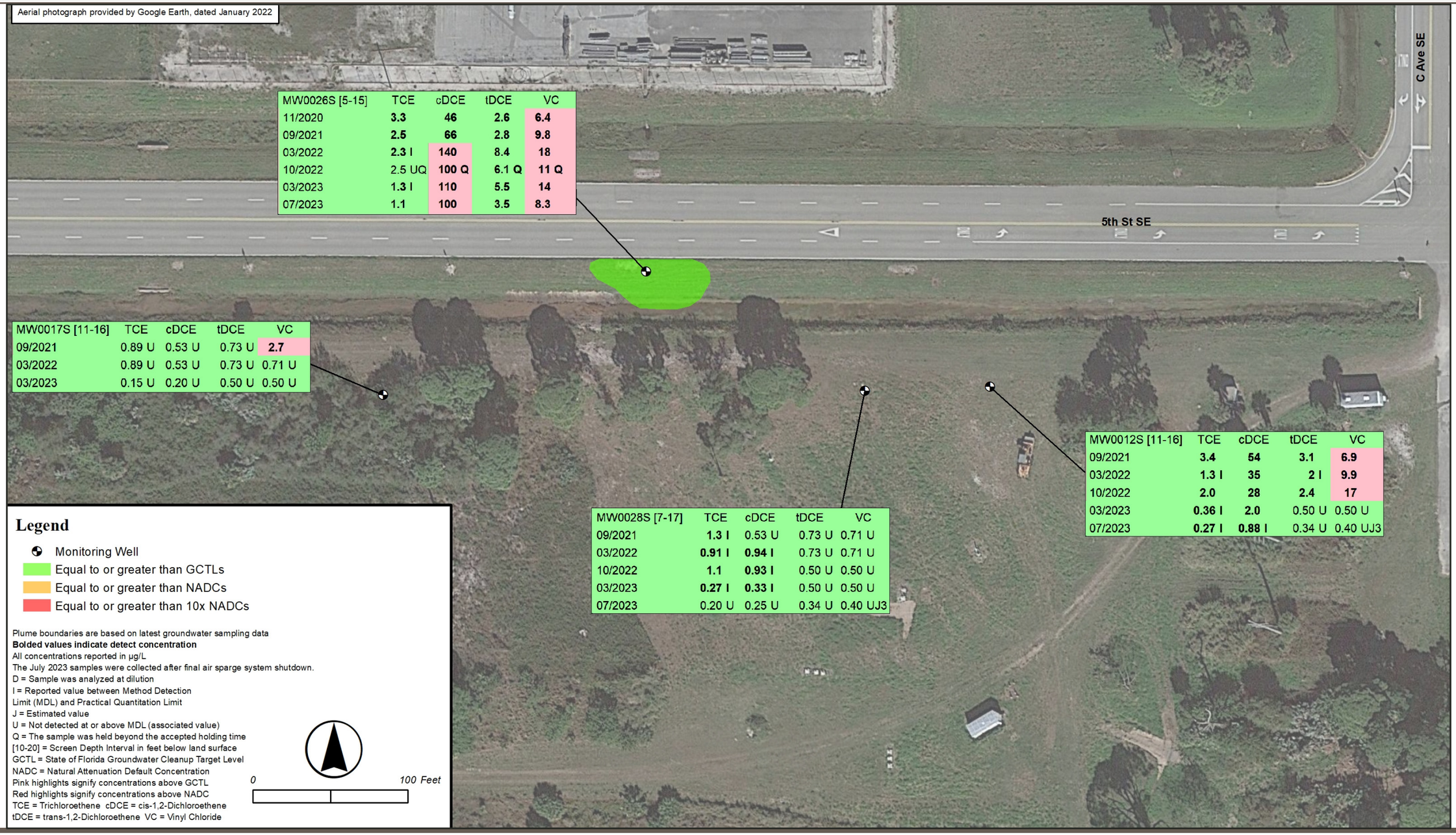
Performance Groundwater Sampling: COCs – Deep

Monitoring Well (POL-)	Screened Interval (feet bls)	TCE (µg/L)				cDCE (µg/L)				tDCE (µg/L)				VC (µg/L)			
		Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23
MW0014ID	32-37	0.50 U	-----	0.15 U	0.79 U	0.57 I	-----	0.36 I	0.71 U	0.50 U	-----	0.50 U	0.95 U	0.50 U	-----	0.50 U	0.64 U
MW0022D	40-45	—	-----	0.15 U	-----	-----	-----	0.20 U	-----	-----	------	0.50 U	-----	-----	-----	0.50 U	-----
MW0044D	30-40	—	1.0	-----	1.5 I	-----	0.64 I	-----	1.4	------	0.73 U	-----	0.95 U	-----	0.71 U	-----	1.1 I

Notes:
U – The analyte was analyzed for but not detected
I – The reported value is between the method detection limit and the laboratory method reporting limit.
Analyte was detected

- **TCE:** <GCTL in all wells; <NADC in all wells; slight detection in well MW0044D.
- **cDCE:** <GCTL in all wells; <NADC in all wells; slight detection in wells MW0014ID, MW0044D.
- **tDCE:** <GCTL in all wells; <NADC in all wells.
- **VC:** <GCTL in all wells; <NADC in all wells; slight detection in well MW0044D.

POL Southern Treatment Area – Shallow Groundwater Plume (5-20 feet bls)



POL Southern Treatment Area – Intermediate Groundwater Plume (20-30 feet bls)

Aerial photograph provided by Google Earth, dated January 2022

MW0026I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**2 I**	0.73 U	**2.1 I**
03/2022	0.89 U	**1.8 I**	0.73 U	**0.84 I**
10/2022	0.50 U	**2.2**	0.50 U	0.50 U
03/2023	0.15 U	**2.1**	0.50 U	**0.56 I**
07/2023	0.20 U	**1.8**	0.34 U	0.40 U

MW0028I [27-32]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	**1.2 I**
03/2022	0.89 U	0.53 U	0.73 U	**1.4 I**
10/2022	0.5 U	**0.71 I**	0.50 U	0.50 U
03/2023	0.15 U	**0.32 I**	0.50 U	**0.64 I**
07/2023	0.20 U	**0.71 I**	0.34 U	0.40 U

MW0008I [25-30]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	0.53 U	0.73 U	**0.93 I**
06/2021	0.89 U	0.53 U	0.73 U	0.71 U
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
12/2021	**1.2 I**	**0.83 I**	0.73 U	0.71 U
03/2022	**1.9 I**	**1 I**	0.73 U	0.71 U
06/2022	0.89 U	**1.6 I**	0.73 U	0.71 U
12/2022	0.89 U	**2.4**	0.73 U	0.71 U
07/2023	0.20 U	0.25 U	0.34 U	0.4 UJ3

MW0012I [28-33]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	0.53 U	0.73 U	**0.76 I**
03/2023	0.15 U	**0.34 I**	0.50 U	**0.52 I**

MW0035SI [18-23]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**1.8 I**	0.73 U	0.71 U
03/2022	0.89 U	**2.3 I**	0.73 U	0.71 U
10/2022	0.5 U	**1.9**	0.50 U	0.50 U
03/2023	0.15 U	**1.7**	0.50 U	0.50 U
07/2023	0.20 U	**0.94 I**	0.34 U	0.40 UJ3

MW0041SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	**4 I**	**410**	**5.4**	**86**
06/2021	**1.7 I**	**2.5**	0.73 U	0.71 U
09/2021	0.89 U	**0.55 I**	0.73 U	0.71 U
12/2021	**1.7 I**	0.53 U	0.73 U	0.71 U
03/2022	**1.1 I**	**0.71 I**	0.73 U	0.71 U
06/2022	**2.2 I**	**0.85 I**	0.73 U	0.71 U
12/2022	**2.5**	**4.8**	0.73 U	0.71 U
07/2023	**3.6**	**6.6**	1.1	0.40 UJ3

MW0036I [25-30]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	**1 I**	**0.79 I**	**5.6**
06/2021	**1.7 I**	**2.8**	0.73 U	0.71 U
09/2021	**2.1 I**	**20**	**0.83 I**	0.71 U
12/2021	**2 I**	**7**	0.73 U	0.71 U
03/2022	**1.5 I**	**1.3 I**	0.73 U	0.71 U
06/2022	**3.3**	**4.5**	0.73 U	0.71 U
12/2022	**2.4**	**2.7**	0.73 U	0.71 U
07/2023	**1.7**	**1.4**	0.34 U	0.40 UJ3

MW0042SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	0.89 U	0.53 U	0.73 U	0.71 U
06/2021	**14**	**44**	**4.6**	**3.7**
09/2021	**5.7**	**49**	**3.9**	0.71 U
12/2021	**6.2**	**33**	**3.2**	0.71 U
03/2022	**6.2**	**19**	**1.6 I**	**1.6 I**
06/2022	**10**	**23**	**2 I**	**2.2 I**
12/2022	**9.9**	**37**	**1.9**	0.71 U
07/2023	**3.3**	**7.2**	**0.64 I**	0.40 UJ3

MW0036SI [18-23]	TCE	cDCE	tDCE	VC
04/2020	**190**	**400**	**17**	**51**
06/2021	**9.3 I**	**270**	**7.9 J**	3.6 U
09/2021	**2 I**	**4**	0.73 U	0.71 U
12/2021	**2.1 I**	**0.85 J**	0.73 U	0.71 U
03/2022	**1.8 I**	0.53 U	0.73 U	0.71 U
06/2022	**2.1 I**	0.53 U	0.73 U	0.71 U
12/2022	**3.1**	0.53 U	0.73 U	0.71 U
07/2023	**1.9**	0.25 U	0.34 U	0.40 UJ3

MW0014SI [18-23]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	**0.9 I**	0.73 U	0.71 U
03/2023	0.15 U	**0.69 I**	0.50 U	0.50 U

MW0014I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	**0.55 I**	0.73 U	0.71 U
03/2022	0.89 U	**0.64 J**	0.73 U	0.71 U
03/2023	0.15 U	**0.21 I**	0.50 U	0.50 U

MW0043I [20-30]	TCE	cDCE	tDCE	VC
04/2020	**10000**	**1500**	**280**	**98 I**
06/2021	**71**	**65**	**4.5**	**0.82 J**
09/2021	**27**	**1.9 I**	0.73 U	0.71 U
12/2021	**35**	**2.4 J**	**0.75 I**	0.71 U
03/2022	**41**	**3.5**	**0.75 J**	0.71 U
06/2022	**6.2**	**0.93 I**	0.73 U	0.71 U
12/2022	**3.7**	0.53 U	0.73 U	0.71 U
07/2023	**10**	**0.92 I**	0.34 U	0.40 UJ3

MW0045I [20-30]	TCE	cDCE	tDCE	VC
04/2020	**2400**	**830**	**400**	**300**
06/2021	**17**	**2.1 J**	**1.2 J**	0.71 U
09/2021	**2.1 I**	0.53 U	0.73 U	0.71 U
12/2021	**1.1 J**	**0.74 J**	0.73 U	0.71 U
03/2022	**1.6 I**	0.53 U	0.73 U	0.71 U
06/2022	**1.2 I**	0.53 U	0.73 U	0.71 U
12/2022	0.89 U	0.53 U	0.73 U	0.71 U
07/2023	**1.3 I**	0.71 U	0.95 U	0.64 U

MW0022I [25-30]	TCE	cDCE	tDCE	VC
09/2021	0.89 U	0.53 U	0.73 U	0.71 U
03/2022	0.89 U	0.53 U	0.73 U	0.71 U
03/2023	0.15 U	0.20 U	0.50 U	0.50 U

5th St SE

C Ave SE

Legend

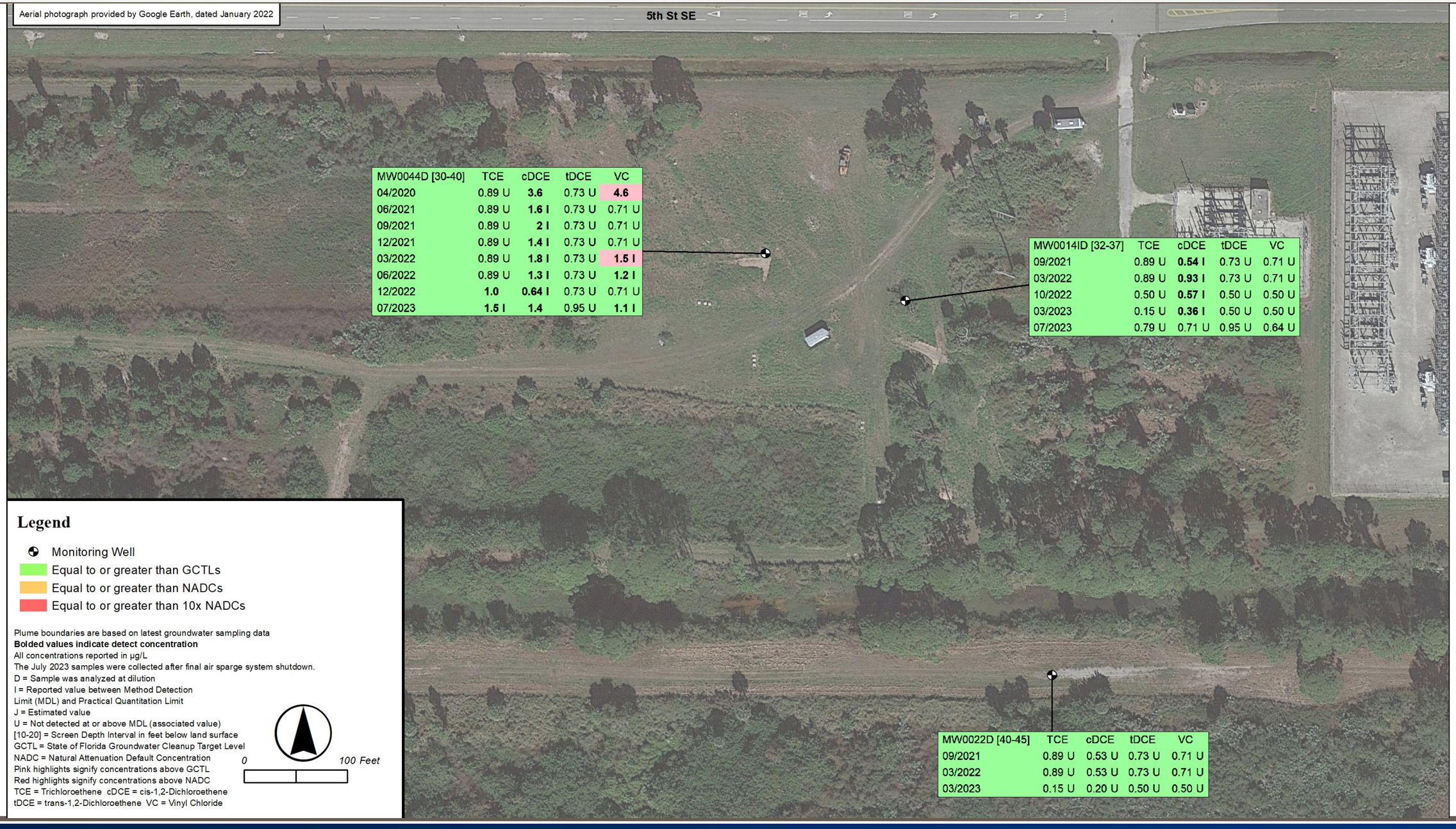
- Monitoring Well
- Equal to or greater than GCTLs
- Equal to or greater than NADCs
- Equal to or greater than 10x NADCs

Plume boundaries are based on latest groundwater sampling data
Bolded values indicate detect concentration
All concentrations reported in µg/L
The July 2023 samples were collected after final air sparge system shutdown.
D = Sample was analyzed at dilution
I = Reported value between Method Detection Limit (MDL) and Practical Quantitation Limit
J = Estimated value
U = Not detected at or above MDL (associated value)
[10-20] = Screen Depth Interval in feet below land surface
GCTL = State of Florida Groundwater Cleanup Target Level
NADC = Natural Attenuation Default Concentration
Pink highlights signify concentrations above GCTL
Red highlights signify concentrations above NADC
TCE = Trichloroethene cDCE = cis-1,2-Dichloroethene
tDCE = trans-1,2-Dichloroethene VC = Vinyl Chloride

0 150 Feet

POL Southern Treatment Area – Deep Groundwater Plume (>40 feet bls)

TETRA TECH



POL Southern Treatment Area Shallow Monitoring Well Exceedances

TETRA TECH

Location ID (POL-)	Screen Interval (ft bls)	Apr-20 Baseline	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Oct-22	Dec-22	Mar-23	Jul-23
MW0008S	5 to 10	X	X	X	X	X	X	-	-	-	-
MW0011S	10 to 15	X	X	X	X	X	X	-	-	-	-
MW0012S	11 to 16	-	-	X	-	X	-	X	-	X	X
MW0014S	8 to 13	-	-	X	-	X	-	-	-	-	-
MW0016S	8 to 13	-	-	X	-	X	-	-	-	-	-
MW0017S	11 to 16	-	-	X	-	X	-	-	-	X	-
MW0018S	8 to 13	X	X	X	X	X	X	-	-	-	-
MW0026S	5 to 15	-	-	X	-	X	-	X	-	X	X
MW0028S	5 to 15	-	-	X	-	X	-	X	-	X	X
MW0035S	5 to 15	-	-	X	-	X	-	-	-	-	-
MW0043S	10 to 20	X	X	X	X	X	X	-	-	-	-
MW0045S	10 to 20	X	X	X	X	X	X	-	-	-	-

X – Sampled
— - Not Sampled

Concentration exceeds the State of Florida GCTL

POL Southern Treatment Area Intermediate Monitoring Well Exceedances

Location ID (POL-)	Screen Interval (ft bls)	Apr-20 Baseline	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Oct-22	Dec-22	Mar-23	Jul-23
MW0008I	25 to 30	X	X	X	X	X	X	-	-	-	-
MW0011I	25 to 30	X	X	X	X	X	X	-	-	-	-
MW0012I	28 to 33	-	-	X	-	X	-	-	-	X	-
MW0014SI	18 to 23	-	-	X	-	X	-	-	-	X	-
MW0014I	25 to 30	-	-	X	-	X	-	-	-	X	-
MW0016I	25 to 30	-	-	X	-	X	-	-	-	-	-
MW0018I	25 to 30	X	X	X	X	X	X	-	-	-	-
MW0022I	25 to 30	-	-	X	-	X	-	-	-	X	-
MW0026I	25 to 30	-	-	X	-	X	-	X	-	X	X
MW0028I	25 to 30	-	-	X	-	X	-	X	-	X	X
MW0035SI	18 to 23	-	-	X	-	X	-	X	-	X	X
MW0036SI	18 to 23	X	X	X	X	X	X	-	X	-	X
MW0036I	25 to 30	X	X	X	X	X	X	-	X	-	X
MW0041SI	18 to 23	X	X	X	X	X	X	-	X	-	X
MW0042SI	18 to 23	X	X	X	X	X	X	-	X	-	X
MW0043I	20 to 30	X	X	X	X	X	X	-	X	-	X
MW0044I	20 to 30	X	X	X	X	X	X	-	-	-	-
MW0045I	20 to 30	X	X	X	X	X	X	-	X	-	X
MW0047I	20 to 30	X	X	X	X	X	X	-	-	-	-

X – Sampled
–– - Not Sampled

Concentration exceeds the State of Florida GCTL

Concentration exceeds the Florida Department of Environmental Protection (FDEP) Natural Attenuation Default Concentration (NADC)

POL Southern Treatment Area Deep Monitoring Well Exceedances

TETRA TECH

Location ID (POL-)	Screen Interval (ft bls)	Apr-20 Baseline	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22	Oct-22	Dec-22	Mar-23	Jul-23
MW0014ID	32 to 37	-	-	X	-	X	-	X	-	X	X
MW0016D	38 to 43	-	-	X	-	X	-	-	-	-	-
MW0018D	38 to 43	X	X	X	X	X	X	-	-	-	-
MW0022D	40 to 45	-	-	X	-	X	-	-	-	X	-
MW0039ID	32 to 37	-	-	X	-	X	-	-	-	-	-
MW0043D	30 to 40	X	X	X	X	X	X	-	-	-	-
MW0044D	30 to 40	X	X	X	X	X	X	-	X	-	X
MW0045D	30 to 40	X	X	X	X	X	X	-	-	-	-
MW0046D	30 to 40	X	X	X	X	X	X	-	-	-	-
MW0046DD	40 to 50	X	X	X	X	X	X	-	-	-	-
MW0047D	30 to 40	X	X	X	X	X	X	-	-	-	-
MW0047DD	40 to 50	X	X	X	X	X	X	-	-	-	-

X – Sampled
–– - Not Sampled

Concentration exceeds the State of Florida GCTL

Overview of Year 2 Performance Monitoring Results

TETRA TECH

Shallow Groundwater Plume (5-20 feet bls)

- Results from the October 2019 baseline DPT sampling event indicated VOCs >10XNADC within the 10 to 20 feet bls interval. During the Year 1 operational period, only slight GCTL exceedances were observed
- Year 2, GCTL exceedances in October 2022 (VC), March 2023 (cDCE and VC), and July 2023 (cDCE and VC)
- At the conclusion of Year 2, VC and cDCE exceeded GCTL at one location (MW0026S) within the shallow zone

Intermediate Groundwater Plume (20-40 feet bls)

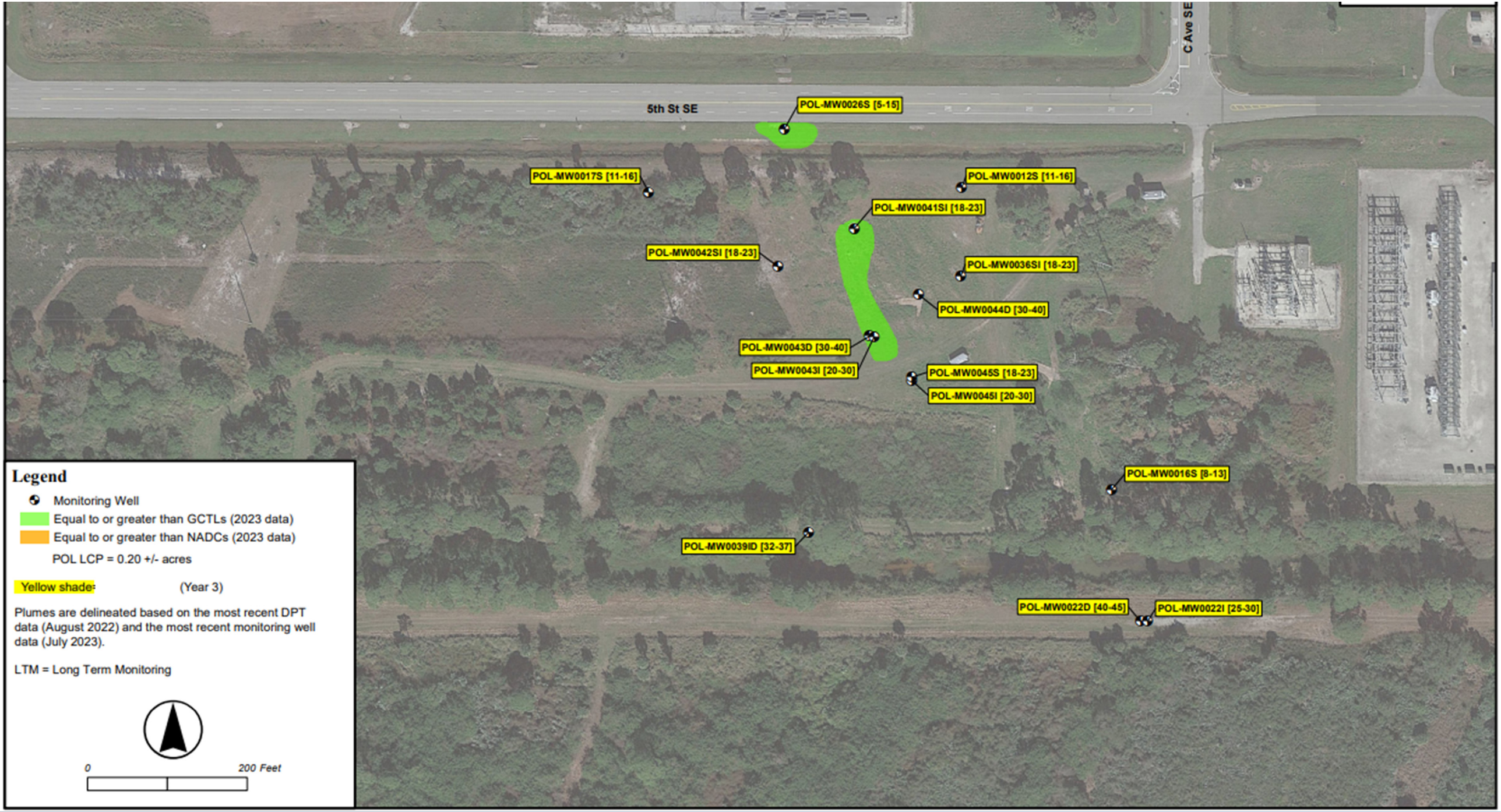
- Results from the October 2019 baseline DPT sampling event indicated VOCs >SZ within the 20 to 30 feet bls interval. During the baseline event, only >10XNADC exceedances were observed. During the first quarterly sampling event, concentrations significantly reduced to <NADC values
- During Year 2, GCTL exceedances of TCE were detected within the intermediate zone In December 2022 (MW0042SI and MW0043I) and July 2023 (MW0041SI and MW0043I). These locations were not sampled in March 2023

Deep Groundwater Plume (>40 feet bls)

- Only slight GCTL exceedances were observed during the October 2019 baseline DPT sampling event
- All monitoring wells were observed to have values of VOCs <GCTLs throughout the Year 1 and Year 2 operational periods

Monitoring Well (POL-)	Year 1 Sampling Frequency	Year 2 Sampling Frequency	Year 3 Sampling Frequency	LTM Rationale
MW0008S	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since (and including) baseline
MW0008I	Quarterly	Semi-annually	Eliminated	No detections >GCTL since (and including) baseline
MW0011S	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since (and including) baseline
MW0011I	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since baseline.
MW0012S	Semi-annually	Semi-annually	Annually	Highest VC detection >GCTL in Year 2.
MW0012I	Semi-annually	Annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0014S	Semi-annually	Eliminated	*Eliminated*	No detections >GCTL in Year 1, eliminated in Year 2.
MW0014SI	Semi-annually	Annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0014I	Semi-annually	Annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0014ID	Semi-annually	Semi-annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0016S	Semi-annually	*Eliminated*	Annually	No detections >GCTL in Year 1, eliminated in Year 2.
MW0016I	Semi-annually	*Eliminated*	*Eliminated*	No detections >GCTL in Year 1, eliminated in Year 2.
MW0016D	Semi-annually	*Eliminated*	*Eliminated*	No detections >GCTL in Year 1, eliminated in Year 2.
MW0017S	Semi-annually	Annually	Annually	Western Side Gradient, monitor barrier relationship with SW3 plume.
MW0018S	Quarterly	*Eliminated*	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0018I	Quarterly	*Eliminated*	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0018D	Quarterly	*Eliminated*	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0022I	Semi-annually	Annually	Annually	Downgradient-most monitoring well of the intermediate interval.
MW0022D	Semi-annually	Annually	Annually	Downgradient-most monitoring well of the deep interval.
MW0026S	Semi-annually	Semi-annually	Annually	Highest cDCE detection >GCTL in Year 2, VC >GCTL
MW0026I	Semi-annually	Semi-annually	*Eliminated*	All COCs <GCTL since September 2021.
MW0028S	Semi-annually	Semi-annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0028I	Semi-annually	Semi-annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0035S	Semi-annually	Eliminated	*Eliminated*	No detections >GCTL in Year 1, eliminated in Year 2.
MW0035SI	Semi-annually	Semi-annually	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0036SI	Quarterly	Semi-annually	Annually	Eastern side-gradient location in former HCP.
MW0039ID	Quarterly	Eliminated	Annually	Southwestern side-gradient location in former HCP.
MW0041SI	Quarterly	Semi-annually	Annually	TCE >GCTL in July 2023.
MW0042SI	Quarterly	Semi-annually	Annually	TCE >GCTL throughout Year 1 and Year 2 operations.
MW0043S	Quarterly	Eliminated	*Eliminated*	No detections >GCTL throughout Year 1 and Year 2.
MW0043I	Quarterly	Semi-annually	Annually	TCE >GCTL throughout Year 1 and Year 2 operations.
MW0043D	Quarterly	Eliminated	Annually	Northwestern side-gradient location in former SZ.
MW0044I	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since baseline
MW0044D	Quarterly	Semi-annually	Annually	Highest detections in deep interval in Year 1 and 2 in SZ.
MW0045S	Quarterly	Eliminated	Annually	Downgradient of former SZ in shallow interval.
MW0045I	Quarterly	Semi-annually	Annually	Downgradient of former SZ in intermediate interval.
MW0045D	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since baseline.
MW0046D	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since baseline.
MW0046DD	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since (and including) baseline
MW0047I	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since baseline.
MW0047D	Quarterly	Eliminated	*Eliminated*	Downgradient of former HCP and SZ in deep interval.
MW0047DD	Quarterly	Eliminated	*Eliminated*	No detections >GCTL since (and including) baseline

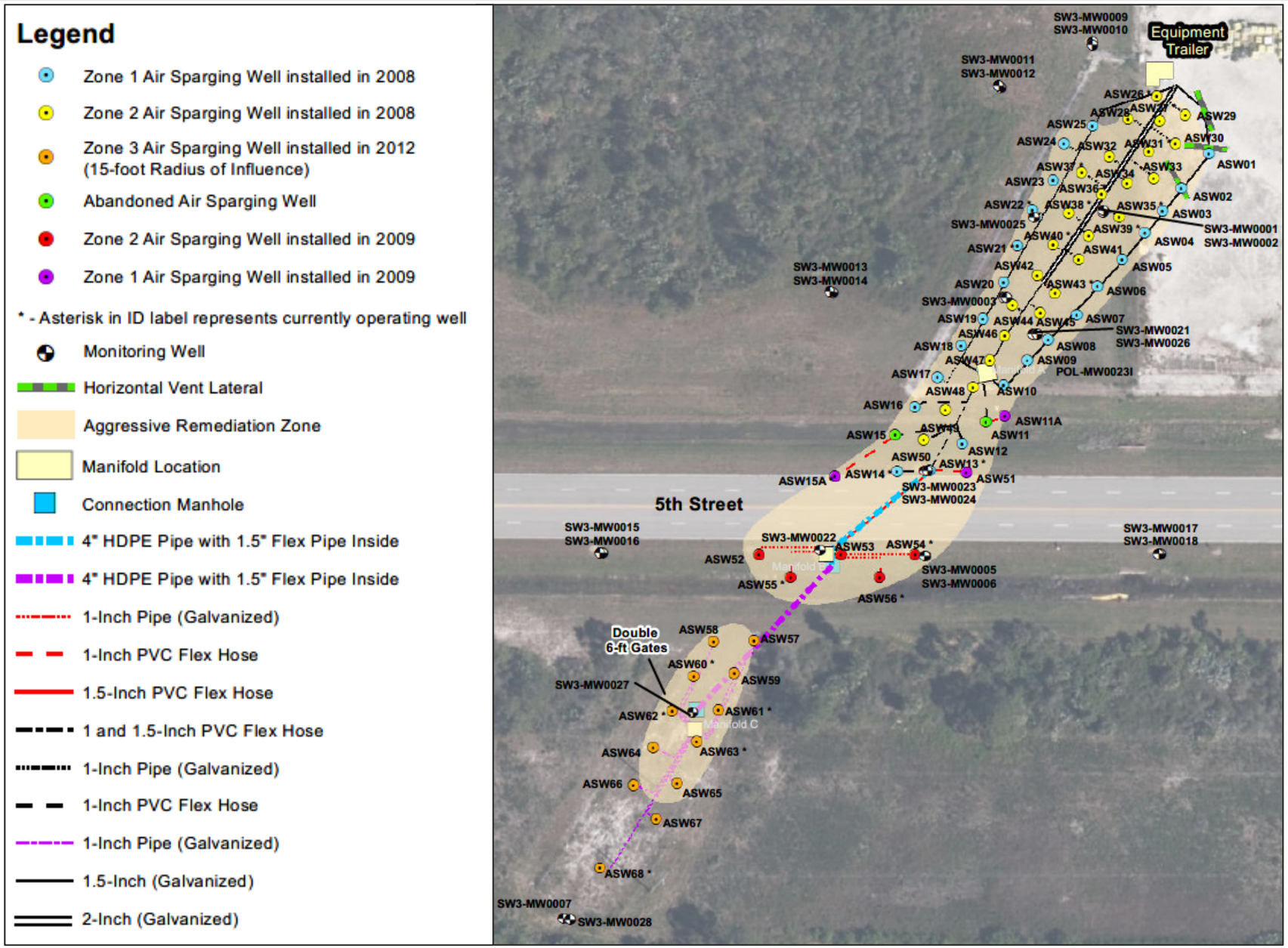
Following startup of the IM system, designated performance monitoring wells were sampled during the <u>two years</u> of AS system operation. After the completion of active remediation and subsequent June 2023 IM system decommissioning, POL Southern Treatment Area will be transitioning to LTM to monitoring the remaining VOC concentrations. For Year 3 sampling, we recommend transitioning the site to LTM based on residual VOC concentrations that remain and to provide consistent sampling schedule with POL Northern Area and SW3.



POL Southern Treatment Area Proposed LTM Monitoring Schedule

SWMU 067 – POL Northern Area and SWMU 088 – Supply Warehouse # 3 Long-Term Monitoring Program

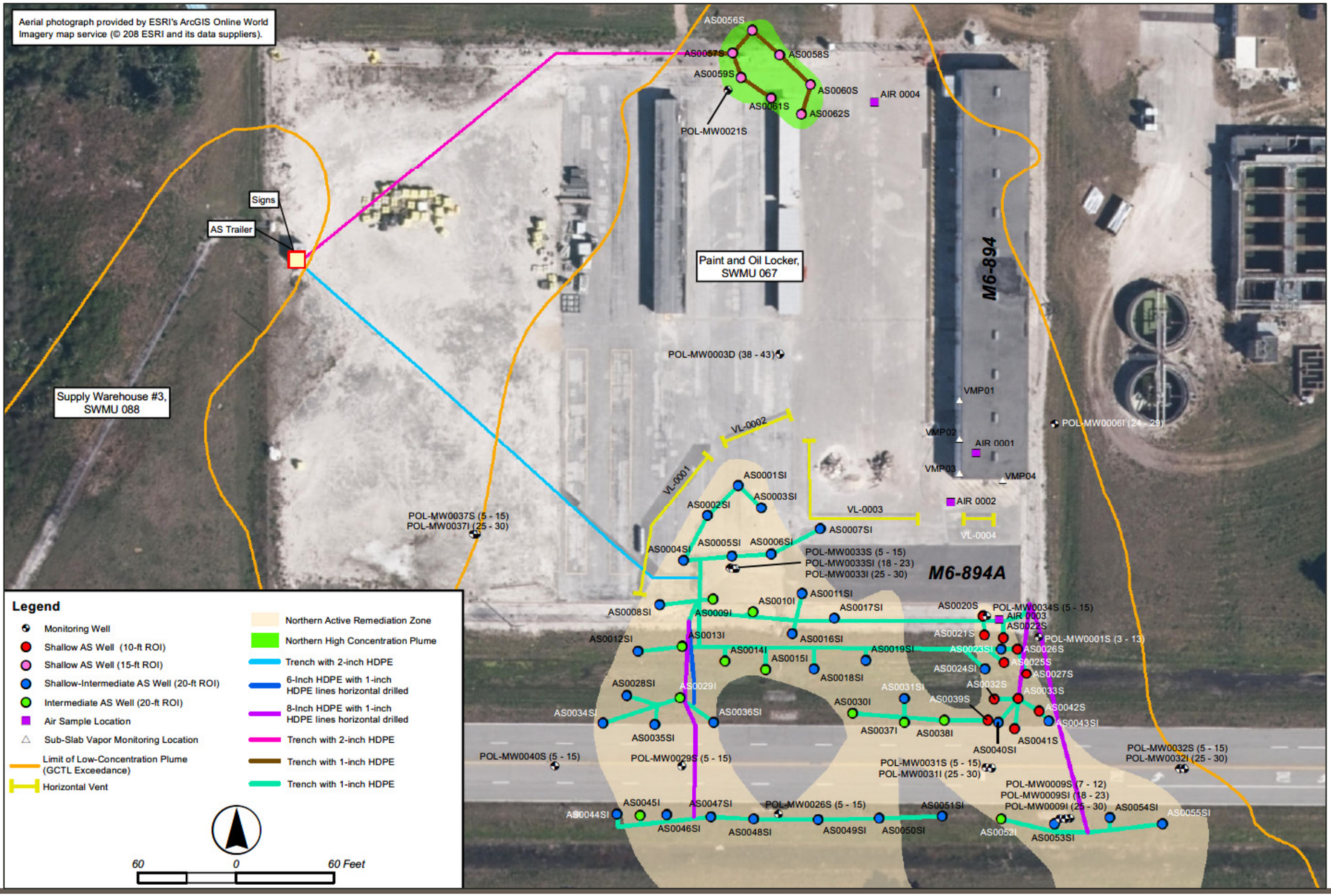
SW3 Treatment History



- SW3 AS startup began in May 2009
- TCE reduced by 90-percent and VC reduced by 52-percent from startup through March 2018
- March 2018: KSCRT consensus reached to shut down SW3, in conjunction with the POL AS system shutdown (Meeting Minute 1803-M19, Decision 1803-D63)
- LTM initiated following shutdown

March 2011 SW3 remediation zone shown

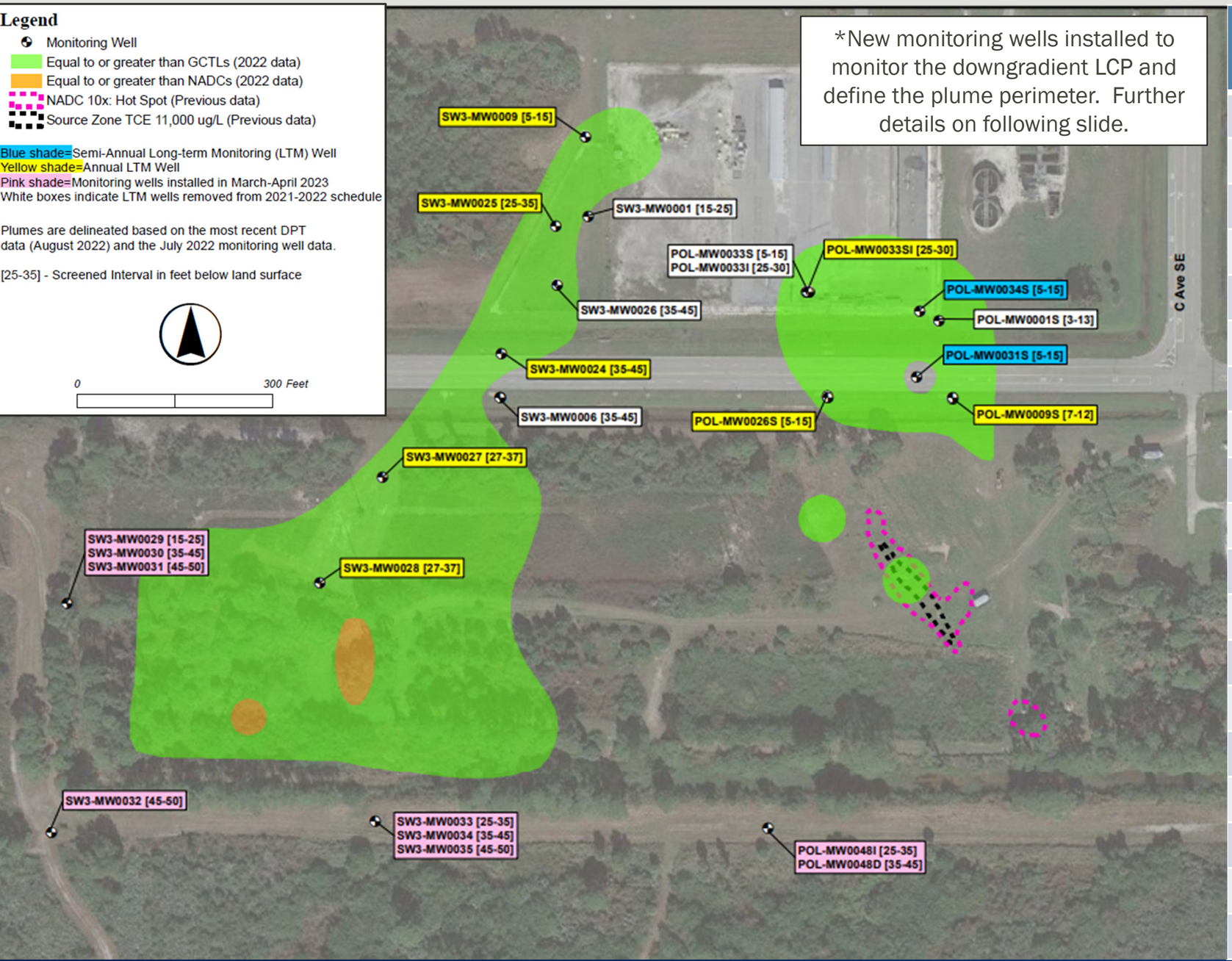
POL Northern Area Treatment History



- POL AS startup began in June 2013
- TCE reduced by 95-percent and VC reduced by 85-percent from startup through March 2018
- March 2018: KSCRT consensus reached to shut down POL, in conjunction with SW3 AS system shutdown (Meeting Minute 1803-M19, Decision 1803-D63)

June 2012 POL plumes shown

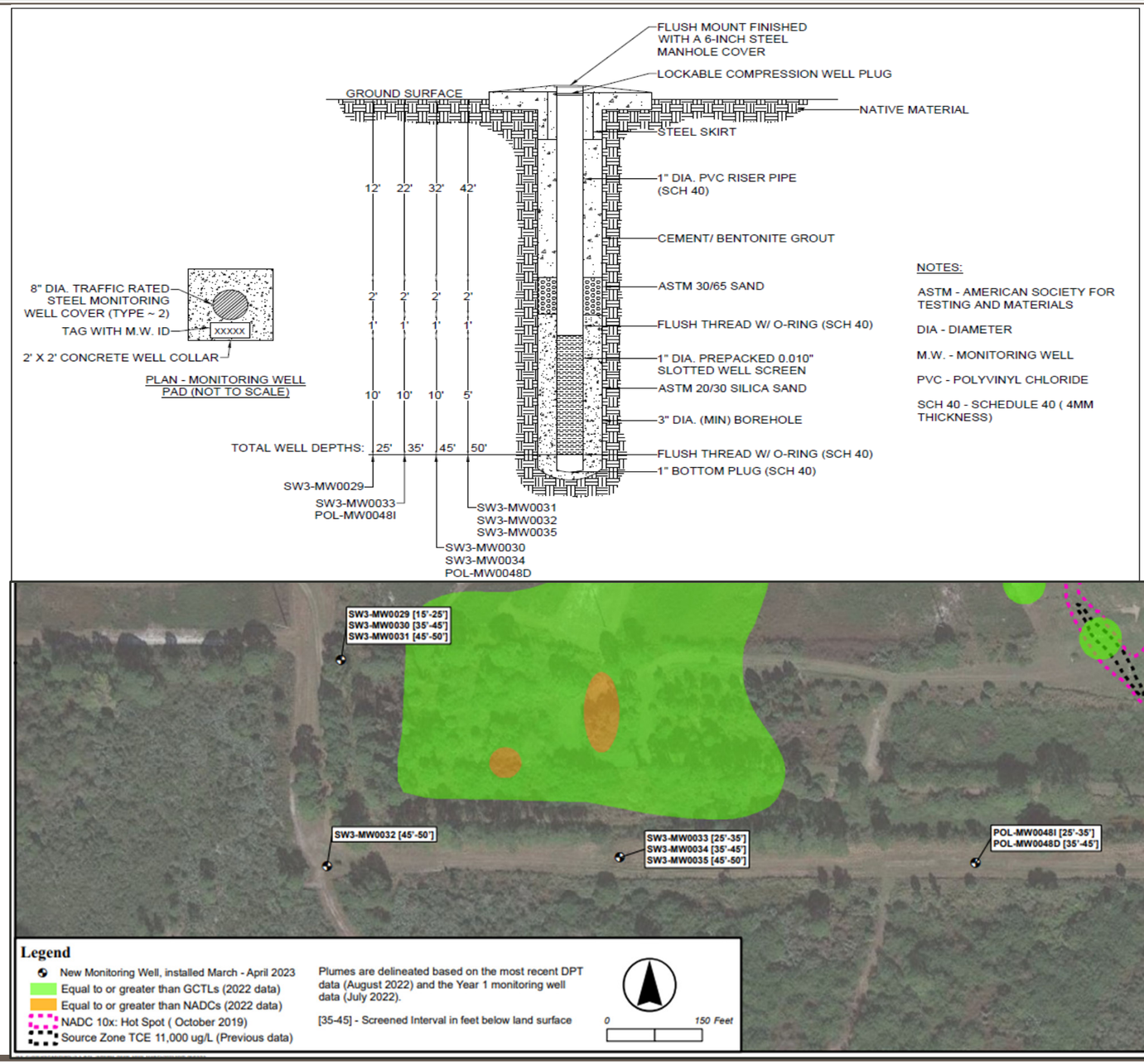
SW3 and POL North LTM Groundwater Monitoring Plan



Sample Location	Sample Rationale	Screened Interval (feet bls)
SW3-MW0009	Upgradient of LCP.	15-25
SW3-MW0024	Along centerline of remedial zone.	35-45
SW3-MW0025	Western edge of remedial zone.	35-45
SW3-MW0027	Along centerline of remedial zone.	27-37
SW3-MW0028	Downgradient of HCP.	27-37
SW3-MW0029	*Shallow Eastern LCP Side gradient*	*15-25*
*SW3-MW0030**	*Installed to define the plume perimeter.*	*35-45*
*SW3-MW0031**	*Installed to define the plume perimeter.*	*45-50*
*SW3-MW0032**	*Installed to define the plume perimeter.*	*45-50*
*SW3-MW0033**	*Installed to define the plume perimeter.*	*25-35*
*SW3-MW0034**	*Installed to define the plume perimeter.*	*35-45*
*SW3-MW0035**	*Installed to define the plume perimeter.*	*45-50*
POL-MW0009S	Installed to define the plume perimeter.	7-12
POL-MW0026S	TCE and VC >GCTL in May 2018.	5-15
POL-MW0031S	Downgradient of MW0034S.	5-15
POL-MW0033SI	TCE >GCTL in May 2018.	18-23
POL-MW0034S	TCE >10XNADC in October 2018.	5-15
*POL-MW0048I**	*Installed to define the plume perimeter.*	*25-35*
*POL-MW0048D**	*Installed to define the plume perimeter.*	*35-45*

New Monitoring Wells Installed March-April 2023 and LCP

- Per KSCRT discussion in October 2022, FDEP requested downgradient monitoring wells to be installed at both SW3 and POL to monitor LCP plume migration (if any)
- The proposed SW3 and POL monitoring wells and screened intervals were submitted via email to the FDEP for approval following the October 2022 KSCRT meeting
- Following FDEP, SW3-MW0029 through SW3-MW0035, POL-MW0048I, and POL-MW0048D were installed in March-April 2023
- Sampling of the newly installed monitoring wells was conducted upon installation completion



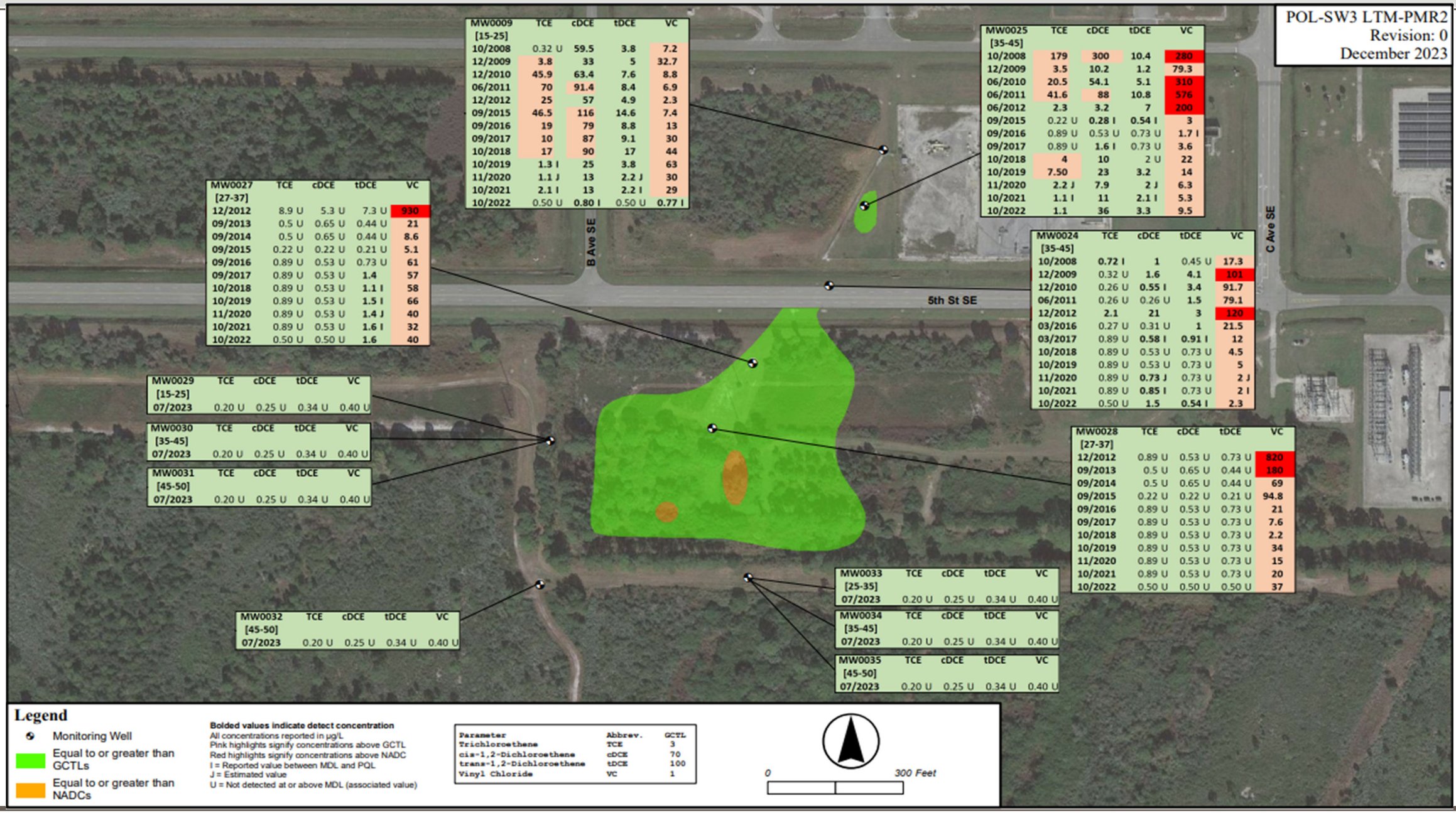
SW3 LTM Year 2 Results

Monitoring Well (SW3-)	Screened Interval (ft bls)	Sample Date	TCE (µg/L)	cDCE (µg/L)	tDCE (µg/L)	VC (µg/L)
MW0009	15-25	Oct-22	0.50 U	0.80 I	0.50 U	0.77 I
MW0024	35-45		0.50 U	1.5	0.54 I	2.3
MW0025	35-45		1.1	36	3.3	9.5
MW0027	27-37		0.50 U	0.50 U	1.6	40
MW0028	27-37		0.50 U	0.50 U	0.50 U	37
MW0029	15-25	Jul-23	0.20 U	0.25 U	0.34 U	0.40 U
MW0030	35-45		0.20 U	0.25 U	0.34 U	0.40 U
MW0031	45-50		0.20 U	0.25 U	0.34 U	0.40 U
MW0032	45-50		0.20 U	0.25 U	0.34 U	0.40 U
MW0033	25-35		0.20 U	0.25 U	0.34 U	0.40 U
MW0034	35-45		0.20 U	0.25 U	0.34 U	0.40 U
MW0035	45-50		0.20 U	0.25 U	0.34 U	0.40 U

I – The reported value is between the method detection limit and the laboratory method reporting limit.
U – The analyte was analyzed for, but not detected.
Analyte was detected.
Concentration exceeds the State of Florida GCTL.

- Samples were collected from 5 monitoring wells at SW3 in October 2022 and 7 monitoring wells in July 2023
- TCE
 - <GCTL in all wells
 - <NADC in all wells
 - Peak concentration of 13,400 µg/L in October 2008 in MW0001
- cDCE and tDCE
 - <GCTL in all wells in October 2022
- VC
 - >GCTL (1 µg/L) in 4 wells in October 2022
 - <GCTL in all wells in July 2023
 - <NADC in all wells
 - Peak concentration of 930 µg/L in December 2012 in MW0027
 - Last observed VC concentration >NADC in MW0027 was in March 2014 (220 µg/L)
- Analytes <NADC in all samples in October 2022 and July 2023

SW3 LTM Analytical Results



POL LTM Sampling

Monitoring Well (POL-)	Screened Interval (ft bls)	TCE (µg/L)				cDCE (µg/L)				tDCE (µg/L)				VC (µg/L)			
		Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-22	Jul-23	Oct-22	Dec-22	Mar-23	Jul-23	Oct-22	Dec-22	Mar-22	Jul-23
MW0009S	7-12	—	6.0	—	—	—	1.0	—	—	—	0.73 U	—	—	—	0.71 U	—	—
*MW0026S	5-15	2.5 UQ	—	—	—	100 Q	—	—	—	6.1 Q	—	—	—	11 Q	—	—	—
MW0031S	5-15	—	0.89 U	0.15 U	—	—	2.0	0.71 I	—	—	0.73 U	0.50 U	—	—	0.71 U	0.50 U	—
MW0033SI	18-23	0.50 U	—	—	—	22	—	—	—	17	—	—	—	0.50 U	—	—	—
MW0034S	5-15	—	1,200	540	—	—	37	66	—	—	18 U	2.5 U	—	—	18 U	2.5 U	—
MW0048I	25-35	—	—	—	0.20 U	—	—	—	0.25 U	—	—	—	0.34 U	—	—	—	0.40 UJ3
MW0048D	35-45	—	—	—	0.20 U	—	—	—	0.25 U	—	—	—	0.34 U	—	—	—	0.40 UJ3

Notes:
I – The reported value is between the method detection limit and the laboratory method reporting limit.
U – The analyte was analyzed for, but not detected.
Q – The sample was held beyond the accepted holding time.
J3 – Estimated value; may not be accurate.
Analyte was detected.
Concentration exceeds the State of Florida GCTL.
Concentration exceeds the NADC

*Note: MW0026S was out of hold time due to laboratory system error. However, the data reported is consistent with historical results. Additionally, it was sampled again in March 2023 and June 2023 for verification and confirmation of analytical trends.

Summary

Samples collected from 7 monitoring wells at POL for Year 2 LTM Sampling.

TCE

- >GCTL (3 µg/L) in 2 wells.
- <NADC (300 µg/L) since system shutdown (March 2018) except for MW0034S. TCE was observed at 1,200 µg/L in December 2022 and 540 µg/L in March 2023.

cDCE and tDCE

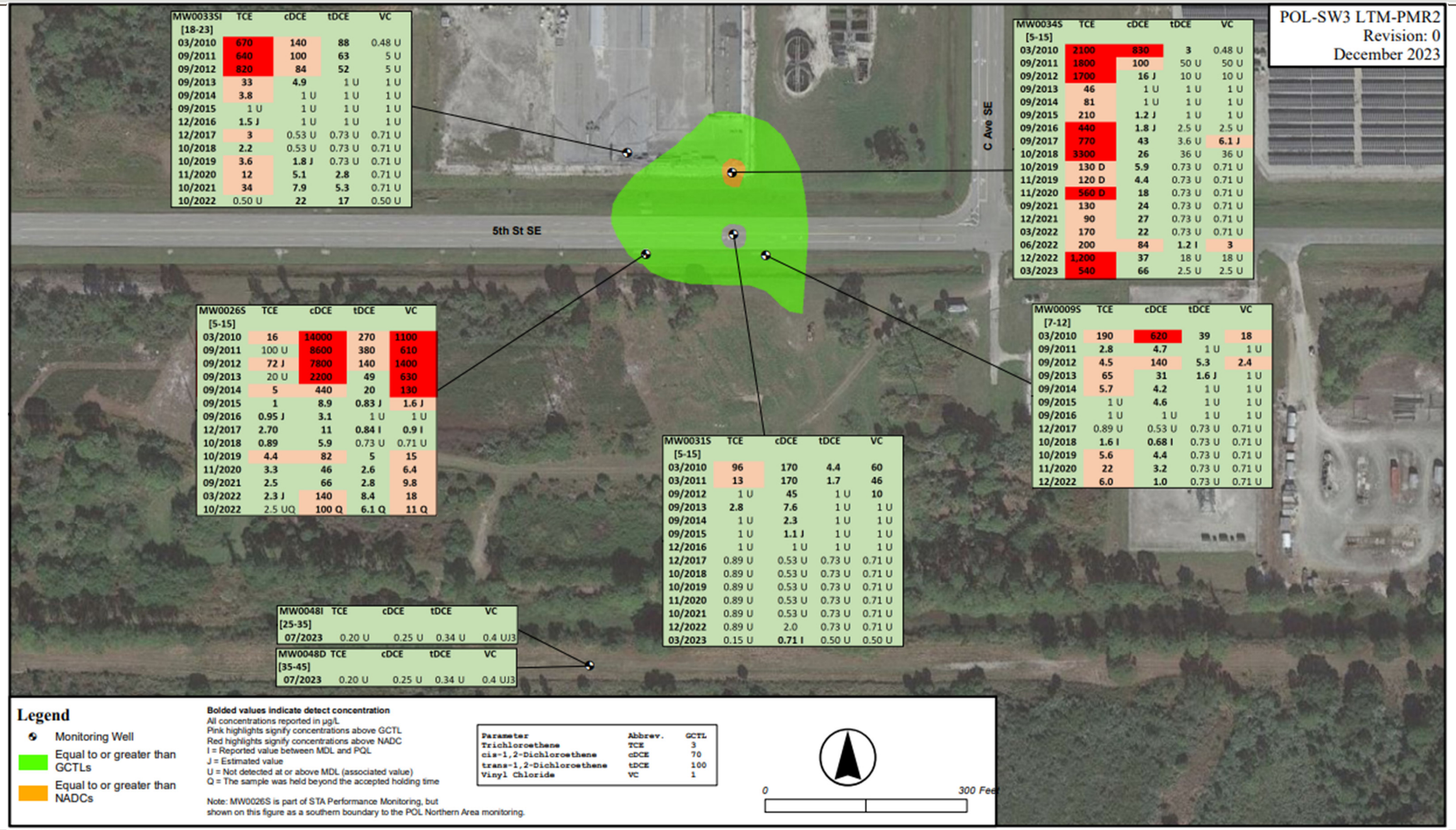
- cDCE >GCTL (70 µg/L) in MW0026S in October 2022
- cDCE and tDCE <GCTL in all other wells during each sampling event

VC

- >GCTL (1 µg/L) in 1 well (MW0026S) in October 2022

Analytes <NADC in all samples collected during this reporting period, except for MW0034S.

POL LTM Analytical Results



POL and SW3 LTM Sampling

SW3

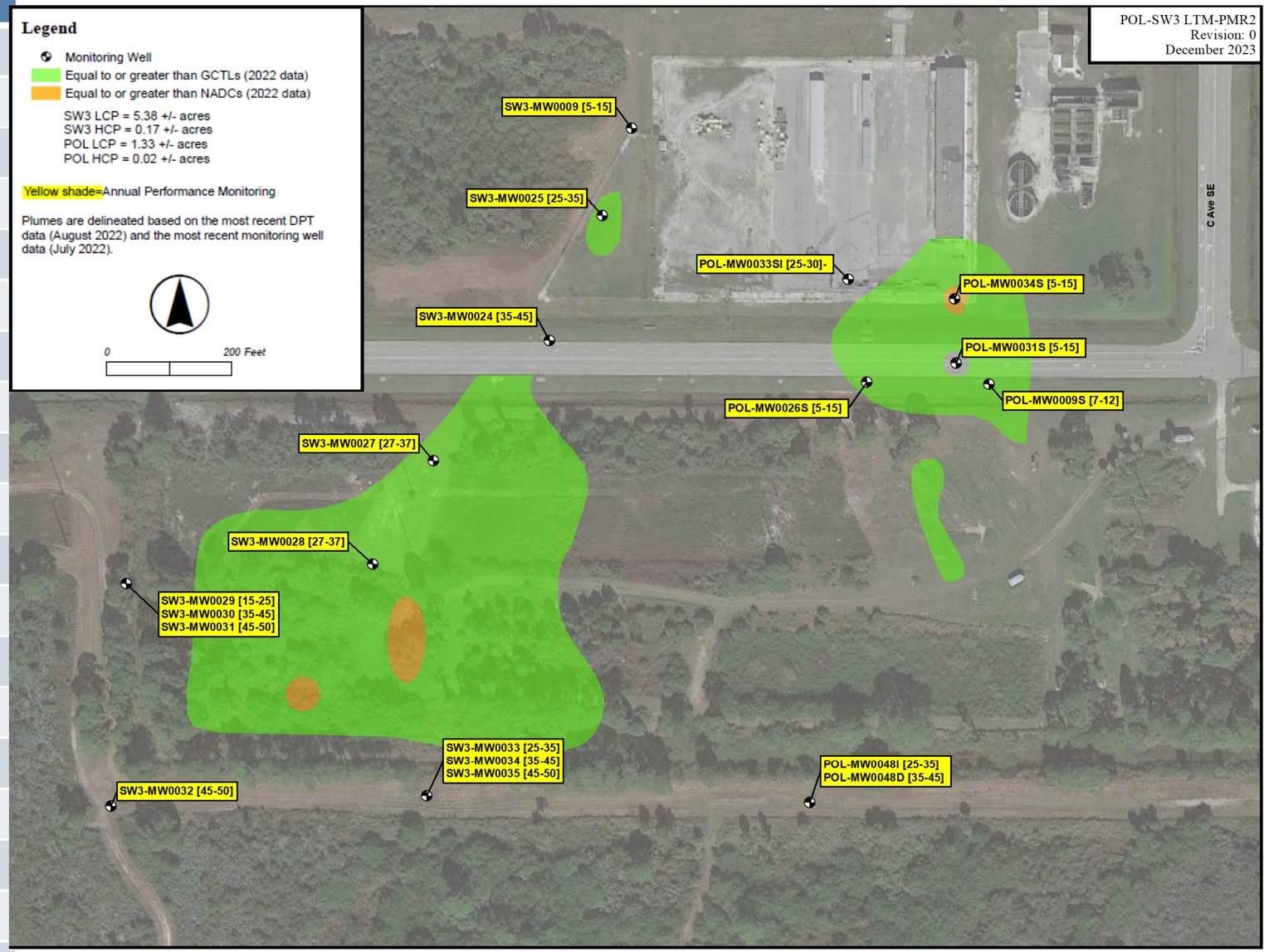
- All VOC concentrations remain less than the FDEP NADC in all wells sampled in October 2022
- Newly installed monitoring wells along the SW3 LCP downgradient plume edge all reported non-detect concentrations in July 2023
- **Propose:** Continuing sampling MW0009, MW0024, MW0025, MW0027, and MW0028 through MW0035 on an annual basis (October 2023 to maintain uniform sampling cycle)

POL

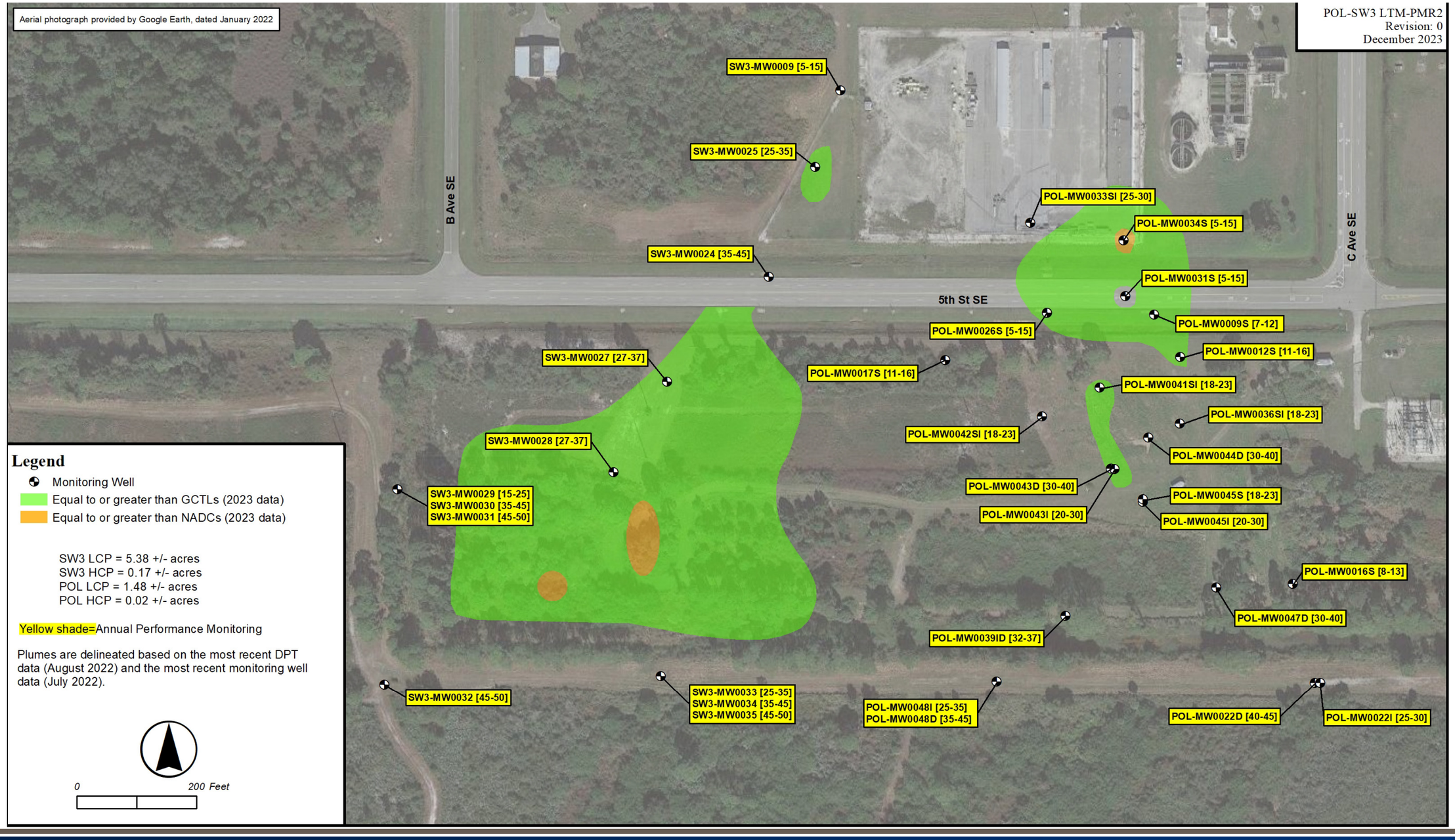
- All VOCs <NADCs in October 2022
- TCE concentrations were observed to be variable
 - As discussed in previous ADPs, it appears that the water level directly contributes to TCE concentrations in MW0034S. As the groundwater elevation increases, the TCE concentration increases, suggesting TCE contamination may be leaching from the vadose zone.
 - April 2017, soil sampling determined sorbed TCE mass adjacent to MW0034S is potentially a contributing source to fluctuating TCE concentrations in MW0034S as TCE transitions from sorbed phase to dissolved phase
 - At the request of the FDEP, semi-annual sampling of MW0026S (downgradient of MW0034S) has been occurring since September 2021 to ensure no TCE migration from MW0034S is occurring
- Newly installed monitoring wells along the POL LCP downgradient plume edge all reported non-detect concentrations in July 2023
- **Propose:** Continuing sampling MW0009S, MW0026S, MW0033SI, MW0034S, MW0048I, and MW0048D on an annual basis (October 2023 to maintain uniform sampling cycle). **Note:** TCE concentrations in MW0034S appear to be peak during the end of the “wet season”, in-line with the October 2023 uniform sampling cycle.

Team Consensus for both POL and SW3 sites

Site	Sample Location	Screened Interval (feet bls)	Oct-23
SW3-	MW0009	15-25	X
	MW0024	35-45	X
	MW0025	35-45	X
	MW0027	27-37	X
	MW0028	27-37	X
	MW0029	15-25	X
	MW0030	35-45	X
	MW0031	45-50	X
	MW0032	45-50	X
	MW0033	25-35	X
	MW0034	35-45	X
	MW0035	45-50	X
POL-	MW0009S	7-12	X
	MW0026S	5-15	X
	MW0031S	5-15	X
	MW0033SI	18-23	X
	MW0034S	5-15	X
	MW0048I	25-35	X
	MW0048D	35-45	X



POL Southern Treatment Area, POL Northern Area, and SW3 Proposed MW Network



Path Forward/Recommendations Summary

- Prepare the POL Southern Treatment Area Year 2 Performance Monitoring Report and POL Northern Area and SW3 LTM Report and submit to FDEP/NASA
- POL Southern Treatment Area - Transition to LTM Sampling:
 - Transition the following 16 monitoring wells to annual LTM sampling (October 2023 to be sampled in conjunction with POL Northern Area and SW3):
 - Shallow: MW0012S, MW0016S, MW0017S, MW0026S, and MW0045S
 - Intermediate: MW0022I, MW0036SI, MW0041SI, MW0042SI, MW0043I, and MW0045I
 - Deep: MW0022D, MW0039ID, MW0043D, MW0044D, and MW0047D
- Continue with the following LTM to include:
 - SW3: Continuing sampling MW0009, MW0024, MW0025, MW0027, and MW0028 through MW0035 on an annual basis (October 2023 to maintain uniform sampling cycle)
 - POL Northern Area: Continuing sampling MW0009S, MW0026S, MW0033SI, MW0034S, MW0048I, and MW0048D on an annual basis (October 2023 to maintain uniform sampling cycle)
- Prepare LTM Report capturing above LTM recommendations for NASA's submittal to FDEP

Any Questions?



Revision 2 Meeting Minutes for October 3rd & 4th, 2023

Attendees:

1. Jason French/FDEP
2. TJ Touran/FDEP
3. Ryan O'Meara/NASA
4. Deda Johansen/NASA
5. Anne Chrest/NASA
6. Chris Adkison/NASA
7. Michelle Moore/NEMCON
8. Mark Jonnet/Tetra Tech
9. Mark Speranza/Tetra Tech
10. Andrew Walters/Tetra Tech
11. Chris Pike/Tetra Tech
12. Alex Murphy/Tetra Tech
13. Debbie Wilson/Tetra Tech
14. Jennifer Buel/Tetra Tech
15. Jennifer Gootee/AECOM
16. Linnea King Clark/AECOM
17. Randy Sillan/AECOM
18. Richard Smith/HGL
19. Jason Bublitz/HGL
20. Ryan Sullivan/HGL
21. Chad Lee/AECOM
22. Sarah Damphousse/Tetra Tech

2310-M01 Michelle Moore/NEMCON

Meeting Minutes and Miscellaneous Items

Objective:

To discuss meeting minutes from the last Team meeting and review open action items for possible closure.

Discussion:

It was pointed out a couple of comments did not make it into the Revision 2 meeting minutes that was recently finalized and sent out via email. A Revision 3 will be issued to correct this after the meeting for Team members to vote on. Revision 3 will then become the finalized minutes that will be distributed and uploaded to the Remediation Information System (RIS).

Note: Post-meeting, Revision 3 of the 2023 June Kennedy Space Center Remediation Team (KSCRT) meeting minutes and decision/action items were approved via email and finalized on October 31, 2023. Members are aware that these could become public record as part of a report at a later date.

Open action items were reviewed, and the following were closed out:

2310-M15 Jason Bublitz/HGL

Vertical Processing Facility (VPF) Decommissioning of the Air Sparge System, October 2023

Objective:

This briefing provides a summary of the activities performed for the Air Sparge (AS) system abandonment activities.

Discussion:

The project objective was to abandon the AS wells and remove all associated AS system piping. HGL coordinated with NASA Remediation Project Manager, Facility Manager, KSC Locators, and BOSS to conduct a temporary electrical utility outage to disconnect the former AS trailer temporary power supply to a transformer. Concrete and other construction debris was transported off-site and disposed of at an appropriate facility in accordance with all local and federal regulations. Site restoration activities were conducted to ensure areas of former system operation are in original or better condition.

In conclusion, the AS system has been properly decommissioned. All AS wells were abandoned by a Florida-licensed water well contractor in accordance with all applicable regulations. Well abandonment permits were completed for all wells that were abandoned. All AS piping was removed and transported off site for disposal with other concrete debris. Site restoration activities completed restored the site to original or better condition.

A Decommissioning of the AS System Report will be submitted as a courtesy to FDEP.

2310-M16 Alex Murphy/Tetra Tech

Paint and Oil Locker (POL) Southern Treatment Area and Supply Warehouse 3 (SW3) Program

Objective:

The goal of this briefing is to present POL Southern Treatment Area Year 2 Performance Monitoring Year 2 performance groundwater

monitoring results, Year 2 system operation, groundwater monitoring results, and proposed path forward. It also includes results and recommendations for the POL Northern Area and SW3 Long-Term Monitoring (LTM). All will be documented in the POL Southern Treatment Area Year 2 Performance Monitoring and POL Northern Area and SW3 LTM Report.

Discussion:

POL (Solid Waste Management Unit [SWMU] #067) and SW3 (SWMU #088) are both located in the Kennedy Space Center (KSC) Industrial Area near the corner of 5th Street SE and C Avenue SE. Note: Per- and Polyfluorinated Alkyl Substances (PFAS) are being investigated in this vicinity under SWMU 117 Sewage Treatment Plant 1 and Sludge Disposal Area. SWMU 117 overlays the POL/SW3 area.

POL Southern Treatment Area:

A brief site history and facility description of POL was provided. The geology within the POL Southern Treatment Area consists of a fine-grained sand/silt (0-4' bls), organic sand hard-pan (4-8' bls), fine-grained sand/silt (8-23' bls), fine-grained sand with fragmented shell/coarse shell (23-53' bls), and a hard clay (53'+ bls). A summary of recent direct push technology (DPT) groundwater sampling (October 2021) was provided with the goal to evaluate the low concentration plume (LCP) boundaries and ensure the volatile organic compound (VOC) plume is adequate delineated. A total of 199 DPT samples were collected from intervals ranging from 10 to 54' bls. Results indicated no detections of trichloroethene (TCE), trans-1,2-dichloroethene (tDCE), or vinyl chloride (VC) along the boundary locations of POL, low detections of cis-1,2-dichloroethene (cDCE) in the POL boundary locations, and VC detections of 2 ug/L at 2 locations along the SW3 boundary locations. A subsequent DPT groundwater sampling event was conducted in August 2022 in the POL Southern Treatment Area to confirm the Year 1 performance analytical results and determine whether any source zone (SZ) or hot spot (HS) plume migration has occurred that is not captured by the current monitoring well network. Sixty total DPT groundwater samples were collected from intervals from 10 to 54' bls. Peak concentrations were observed to be 4.3 ug/L of TCE and 3.1 ug/L of

VC. cDCE and tDCE were not detected in any samples exceeding the Florida groundwater cleanup target levels (GCTLs).

The objective of the POL Southern Treatment Area Interim Measure (IM) is to reduce groundwater concentrations within the TCE SZ, HS, and high concentration plume (HCP) to support the transition to LTM. The overall objective is to reduce groundwater concentrations of TCE, cDCE, and VC to below their respective State of Florida GCTLs. Full-scale operation of the POL Southern Treatment Area air sparge (AS) system began in February 2021. The AS system consists of 112 AS wells (15 ft. radius of influence each) at 3 depth intervals and 6 zones, a 75-hoursepower rotary air compressor, and one centrally located distribution manifold trailer. Throughout the operation period, the AS system was able to meet IM design criteria. In January 2022, all of the Zone 1 and Zone 2 wells were shut off and in May 2022 11 AS wells in Zone 3 and 12 AS wells in Zone 4 were shut off due to upwelling in an adjacent ditch.

During Year 2 of AS system operation: the AS system was shut down approximately 1 week prior to each groundwater sampling event. Additional shutdowns included for Hurricane activity (September 2022 and November 2022), unknown electrical fault (February 2023), trouble shooting for impacts to adjacent ditches, power outage and compressor maintenance (March 2023), and 4000-hour compressor maintenance (June 2023). On June 12, 2023, upon meeting IM objectives, the AS system was turned off and the compressor trailer was moved to Launch Complex 39B. The shutdown was approved by FDEP in advance.

The POL Southern Treatment Area Year 2 performance monitoring plan consisted of semi-annual sampling of 3 shallow wells, 10 intermediate wells, and 2 deep wells; annual sampling of 1 shallow well, 4 intermediate wells, and 1 deep well. Each groundwater sample was analyzed for VOCs via EPA Method 8260D. Air monitoring was conducted at 5 locations in January 2023 and analyzed via EPA Method TO-15. Air results show no TCE, cDCE, tDCE, or VC detected in any of the 5 samples collected.

Potentiometric flows in the shallow groundwater interval showed slight mounding along 5th Street with radial flow and a general site flow towards the southeast. The intermediate and deep intervals showed a flow generally to the southeast with slight depressional

areas. Year 2 Performance groundwater results showed peak concentrations of TCE - 10 ug/L in MW0043I in July 2023, cDCE - 110 ug/L in MW0026s March 2023, tDCE – 6.1 ug/L in MW0026S in October 2022, and VC – 17 ug/L in MW0012S in October 2022.

Results of the Year 2 Performance Monitoring:

- Shallow Groundwater Plume (5-20’ bls)
 - October 2019 baseline DPT indicated VOCs >10XNADC within 10-20’ bls interval. During Year 1 operation, only slight GCTL exceedances were observed.
 - Year 2 – GCTL exceedances in October 2022 (VC), March 2023 (cDCE and VC) and July 2023 (cDCE and VC)
 - By end of Year 2, VC and cDCE >GCTL at only one location (MW0026S)
- Intermediate Groundwater Plume (20-40’ bls)
 - October 2019 baseline DPT indicated VOCs >SZ. During baseline monitoring well event, only 10XNADC exceedances were observed.
 - During Year 2, GCTL exceedances of TCE were detected within the intermediate zone in December 2022 (MW0042SI and MW0043I) and July 2023 (MW0041SU and MW0043I).
- Deep Groundwater Plume (>40’ bs)
 - Only slight GCTL exceedances were observed during October 2019 DPT baseline sampling event
 - All monitoring wells were <GCTLs throughout Year 1 and Year 2
- For Year 3 sampling at the POL Southern Treatment Area, recommendation was provided to transition the site to LTM based on residual contaminants that remain and to provide consistent sampling schedule with POL Northern Area and SW3.

POL Northern Area and Supply Warehouse LTM

A brief history of the SW3 AS treatment and POL Northern Area treatment was provided. The SW3 and POL North LTM monitoring plan was reviewed which includes 12 monitoring wells at SW3 and 7 monitoring wells at POL. Of those monitoring wells, SW3-MW0029

through -MW0035 and POL-MW0048I and POL-MW0048D were installed in March/April 2023 to monitor downgradient LCP plume migration (if any). The proposed monitoring wells and screened intervals were submitted via email to the FDEP for approval following the October 2022 KSCRT meeting. Results of the POL and SW3 LTM sampling determined:

SW3: All VOC concentration remain less than NADC in all wells sampled in October 2022. Newly installed monitoring wells along the LCP downgradient edge all reported non-detect concentrations in July 2023.

POL North: All VOCs <NADCs in October 2022. TCE concentrations were variable. Water level appears to directly contribute to TCE concentrations in MW0034S. Newy installed monitoring wells along the POL LCP plume edge reported non-detect concentrations in July 2023.

FDEP asked to look at the figure on Slide 57 showing results of 9S, 33I and 33S to see the fluctuations and comparing real time. There were no questions on this.

The Team reached consensus to prepare the POL Southern Treatment Area Year 2 Performance Monitoring Report and POL Northern Area and SW3 LTM Report and submit to FDEP/NASA (**2310-D49).**

The Team reached consensus to transition the following wells under the POL Southern Treatment Area to LTM sampling (sample in October 2023 in conjunction with POL North and SW3). The wells are Shallow: POL-MW0012S, -MW0016S, -MW0017S, -MW0026S, and -MW0045S; Intermediate: POL-MW0022I, -MW0036SI, MW0041SI, -MW0042SI, -MW0043I, and -MW0045I; and Deep: POL-MW0022D, -MW0039ID, -MW0043D, -MW0044D, and -MW0047D (**2310-D50).**

The Team reached consensus to continue with the following LTM to include: SW3: Continue sampling SW3-MW0009, -MW0024, -MW0025, -MW0027, and -MW0028 through -MW0035 (conducted in October 2023 to maintain uniform sampling cycle); POL Northern Area: Continue sampling POL-MW0009S, -MW0026S, -MW0033SI, -MW0034S, -MW0048I, and -MW0048D (**2310-D51).**

The Team reached consensus to prepare LTM Report capturing above LTM recommendations for NASA's submittal to FDEP (**2310-D52).**

Results: Decision Item 2310-D49 through D52

2310-M17 Anne Chrest/NASA

Program Update

Discussion:

Senior Management will be visiting on November 30 and Dec 1st and the NASA KSC Remediation Team has been asked to support a tour for them. When we set agenda today, we may have to reduce duration of the meeting based on the guidance from management, with a virtual meeting to cover topics. Jason French is not available that week to attend. NASA is checking to see who will be on the tour and if TJ can attend the tour.

2310-M18 Chris Adkison/ NASA

CAMP Deliverable Look Ahead

The CAMP version has been revised this month already. Some items have been pushed to October/November/December timeframes. Next couple of months there will be quite a few deliverables sent to STRIVES. If any additional changes are needed, please let Chris Adkison know. Some tabs not applicable to everyone but the FDEP review tab was added per TJs request. This is the most current version and will be sent out to the team.

2310-M19 KSCRT

Miscellaneous Discussion

AECOM

1. Wilson Corners CCR ADP (Linnea) 60 minutes
2. South Repeater Bldg. Plume Stop Pilot Plan and annual LTM sampling from April 2024, 30 minutes (technical review needed prior to team meeting on this)